MONETARY POLICY AND THE STATE OF THE ECONOMY

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MONETARY POLICY AND THE STATE OF THE ECONOMY

Wednesday, July 12, 2017

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The committee met, pursuant to notice, at 10 a.m., in room 2128, Rayburn House Office Building, Hon. Jeb Hensarling [chairman of the committee] presiding.

Members present: Representatives Hensarling, Lucas, Pearce, Posey, Luetkemeyer, Huizenga, Duffy, Hultgren, Ross, Pittenger, Wagner, Barr, Rothfus, Messer, Tipton, Williams, Poliquin, Love, Hill, Emmer, Zeldin, Trott, Loudermilk, Mooney, MacArthur, Davidson, Budd, Kustoff, Tenney, Hollingsworth; Waters, Maloney, Velazquez, Sherman, Capuano, Clay, Scott, Green, Moore, Ellison, Perlmutter, Himes, Foster, Kildee, Delaney, Sinema, Beatty, Heck, Vargas, Gottheimer, Gonzalez, Crist, and Kihuen.

Chairman HENSARLING. The Committee on Financial Services will come to order.

Without objection, the Chair is authorized to declare a recess of the committee at any time.

This hearing is for the purpose of receiving the semi-annual testimony of the Chair of the Board of Governors of the Federal Reserve System on monetary policy and the state of the economy.

I now recognize myself for 3 minutes to give an opening statement.

Since we last convened to take Chair Yellen's testimony on monetary policy, there have been some very encouraging economic headlines. Confidence is up, headline unemployment remains low, as does inflation, but the headline unemployment rate still rests too much on an incredibly low labor participation rate and, regrettably, high disability payment participation rates.

Both paychecks and savings for working Americans still have considerable room to grow after 8 years of distortionary economic policy under the previous Administration.

Fortunately, on the fiscal front, help is on the way. House Republicans have passed both the American Health Care Act, to lift the burden of ObamaCare from our economy, and the Financial CHOICE Act, to end bank bailouts to unleash trillions of dollars of capital sitting on the economic sidelines due to the Dodd-Frank Act. These are landmark pieces of legislation. In the months to come, the House will vote on a fairer, flatter, more competitive Tax Code that will undoubtedly bring us a far healthier and dynamic economy, and the Trump Administration is busy rolling back rules that harm our economy as well.

Monetary policy must, of course, do its part as well. I am highly encouraged that Chair Yellen and her colleagues seem to be on track toward some type of monetary policy normalization. Keeping interest rates artificially low for too long was a key contributing factor to the last crisis. Let's hope it does not prove to be a key contributing factor to the next.

What is most desirable for long-term economic growth is for the Fed to set out an easily discernible and transparent policy strategy to achieve its mandate and, but for highly exigent circumstances, to stick to it. Forays by the Fed into fiscal policy, specifically credit allocation, cannot and should not be permitted. Assuming press reports are accurate and the Fed will soon commence an orderly wind down of its balance sheet, this is more good news. Both the size and composition of the balance sheet remain alarming.

Intervention into distinct credit markets like mortgage-backed securities is inherently fiscal policy, not monetary policy. Already, there is talk of having the Fed bail out student loans and public pension funds. I again maintain, if we are not careful, we may wake up one day to find our central bankers have instead become our central planners. What has allowed the Fed's foray into the credit allocation is the policy of paying interest on excess reserves and, today, paying a premium over market.

Interest on required reserves was meant to counteract an implicit tax. Interest on excess reserves should not become a permanent tool of monetary policy. Normalization would suggest, after setting a level of reserves, and short-term interest rates be set by market forces. But today they are set from the top down by an administered rate paid on excess reserves which, again, is a premium rate resting on uncertain legal authority.

Forays into credit allocation in fiscal policy threaten the Fed's independence and economic future. So let's hope the normalization has truly begun.

And I now recognize the ranking member for 4 minutes.

Ms. WATERS. Thank you, Mr. Chairman.

And thank you, Chair Yellen. It is a pleasure to have you with us today.

Since day one, the story of the Trump Administration has been one of chaos and turmoil. This creates uncertainty that threatens the progress of our economy and the opportunities available to all American households. Trump made many big promises to hardworking Americans about ushering in a new level of economic prosperity in America. Yet, despite all of his bluster, let's look at what Trump has actually done when it comes to our economy.

None of it is good. He reversed a planned cut to Federal Housing Administration mortgage insurance premiums that would have saved homeowners $500 a year. He issued executive actions to begin to dismantle Wall Street reforms and embrace the wrong choice act, the chairman's bill to gut the Dodd-Frank Wall Street Reform and Consumer Protection Act and hobble the Fed.

There are actions that endanger the economic progress we have made since the Great Recession. In passing the wrong choice act, House Republicans, once again, are trying to weaken the independence of the Fed and chain the Fed's policy decisions to a mathematical formula that would diminish its ability to support the economy and fulfill its mandate to promote full employment.

The Republicans' bill would also subject Federal financial regulators, including the Fed, to the politicized annual appropriations process.

All of this wasn't bad enough. President Trump will soon have the opportunity to reshape the makeup of the Board of Governors, thereby tilting policy in the direction of Wall Street.

For example, earlier this week, the White House announced the President's intent to nominate Randal Quarles to serve as the Fed's Vice Chair for Supervision and in part a post responsible for overseeing the Fed's implementation of Wall Street reform.

This is troubling, given Quarles' public opposition to key aspects of the Dodd-Frank Act and support for measures that would curtail the Fed's independence.

While our economy has made substantial progress since the height of the financial crisis and we continue to see positive trends in the labor market as a result of the policies put in place by the Fed, Congressional Democrats, and President Obama, key aspects of our economy have yet to fully recover.

Since your last testimony before this committee, wage growth continues to lag and troubling economic disparities continue to exist among racial and ethnic lines. So I hope that policymakers will keep these trends in mind and the fact that inflation expectations have fallen as they evaluate the stance of monetary policy.

So, Chair Yellen, I commend you for your steady leadership and look forward to your testimony.

And, with that, Mr. Chairman, I yield back the balance of my time.

Chairman HENSARLING. The gentlelady yields back.

The Chair recognizes the gentlemen from Kentucky, Mr. Barr, the chairman of our Monetary Policy and Trade Subcommittee, for 2 minutes.

Mr. BARR. Chair Yellen, welcome back to the committee. And despite nearly 9 years of the most accommodative and unconventional monetary policy in U.S. history and despite some recent positive economic news, labor force participation remains at a disappointing 40-year low, wages are stagnant, and economic growth has yet to eclipse 3 percent.

Making matters worse, just like the farm bill used to pay farmers not to plant, the Federal Reserve, by paying interest on excess reserves, is effectively paying banks not to lend.

Former Fed Chairman Ben Bernanke said as much in 2013 when he stated, "Banks are not going to lend out the reserves at a rate lower than they can earn at the Fed."

The Fed has adopted this interest on excess reserves policy to fund its enormous $4.5 trillion balance sheet. By guaranteeing the largest banks in America this low-risk, above-market rate of return on deposits, the Fed is discouraging lending into the real economy, effectively taking money out of the communities across America and leaving less capital for Main Street households and businesses to prosper.

I was glad to read about the Fed's intentions to start shrinking its oversized portfolio. I share the view of St. Louis Fed President James Bullard and others that this decision is long overdue. What concerns me, however, is that, once again, the Fed seems to be improvising instead of following a well-grounded strategy.

Earlier this year, some officials pointed to another Fed funds rate increase in September with a move to start reducing the balance sheet beginning in December. Now we are hearing that the FOMC might start the portfolio reduction plan in September and put off until December any further interest rate increase.

Again, I welcome initiating the process to reduce the size of the balance sheet sooner rather than later, but I look forward to your testimony and hopefully an explanation of whether the Fed is once again changing its strategy and, if so, why.

Thank you for coming today, and I look forward to your testimony about these and other topics.

I yield back.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from Wisconsin, Ms. Moore, the ranking member of our Monetary Policy and Trade Subcommittee, for 1 minute.

Ms. MOORE. Thank you so much, Mr. Chairman.

And thank you, Madam Chairwoman, for appearing here for the annual Humphrey-Hawkins report.

I want to start out by thanking you for your very thorough and thoughtful reply to our Congressional letter regarding disparities in labor markets for African Americans and other minorities. Thank you. It did not have a lot of solutions, but it was very thoughtful pointing out projects that seek to find the answers.

This disparity is really clear among minorities, but I am concerned that it is also increasing in all populations of working Americans. And it seems pretty clear from the research, that the challenge moving forward will be able to use fiscal policy to address income and wealth inequality in a way that the blunt instrument of monetary policy can't, especially as the Fed moves forward to raise rates.

I understand you have to do it, but there is an asymmetric recovery that is troubling. Given that the poor and working class have not felt the benefits of the booming stock market, and that inflation is under control, I think that Congress can and should use the power of the purse to shore up those segments of the population that are still hurting from the recession. And I look forward to hearing your testimony.

I yield back.

Chairman HENSARLING. The time of the gentlelady has expired.

Today, we welcome the testimony of the Honorable Janet Yellen. Chair Yellen has testified before this committee on numerous occasions, so I feel she needs no further introduction.

Without objection, the witness' written statement will be made a part of the record.

Chair Yellen, you are now recognized for 5 minutes to give an oral presentation of your testimony. Thank you for being here.

STATEMENT OF THE HONORABLE JANET L. YELLEN, CHAIR, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Mrs. YELLEN. Thank you. Chairman Hensarling, Ranking Member Waters, and other members of the committee, I am pleased to present the Federal Reserve's semi-annual Monetary Policy Report to the Congress.

In my remarks today, I will briefly discuss the current economic situation and outlook before turning to monetary policy.

Since my appearance before this committee in February, the labor market has continued to strengthen. Job gains have averaged 180,000 per month so far this year, down only slightly from the average in 2016 and still well above the pace we estimate would be sufficient on average to provide jobs for new entrants to the labor force.

Indeed, the unemployment rate has fallen about a quarter percentage point since the start of the year and, at 4.4 percent in June, is 5½ percentage points below its peak in 2010 and modestly below the median of Federal Open Market Committee participants' assessments of its longer run normal level. The labor force participation rate has changed little on net this year, another indication of improving conditions in the jobs market given the demographically driven downward trend in this series. A broader measure of labor market slack that includes workers marginally attached to the labor force and those working part time who would prefer full-time work has also fallen this year and is now nearly as low as it was just before the recession.

It is also encouraging that jobless rates have continued to decline for most major demographic groups, including for African Americans and Hispanics. However, as before the recession, unemployment rates for these minority groups remain higher than for the Nation overall.

Meanwhile, the economy appears to have grown at a moderate pace on average so far this year. Although inflation adjusted gross domestic product is currently estimated to have increased at an annual rate of only 1½ percent in the first quarter, more recent indicators suggest the growth rebounded in the second quarter.

In particular, growth in household spending, which was weak earlier in the year, has picked up in recent months and continues to be supported by job gains, rising household wealth, and favorable consumer sentiment.

In addition, business fixed investment has turned up this year after having been soft last year. And the strengthening in economic growth abroad has provided important support for U.S. manufacturing production and exports.

The housing market has continued to gradually recover, aided by the ongoing improvement in the labor market and mortgage rates that, although up somewhat from a year ago, remain at relatively low levels.

With regard to inflation, overall consumer prices, as measured by the price index for personal consumption expenditures, increased 1.4 percent over the 12 months ending in May, up from 1 percent a year ago but a little lower than earlier in the year.

Core inflation, which excludes energy and food prices, has also edged down in recent months and was 1.4 percent in May, a couple of tenths below the year-earlier reading. It appears that the recent lower readings on inflation are partly the result of a few unusual reductions in certain categories of prices. These reductions will hold 12-month inflation down until they drop out of the calculation.

Nevertheless, with inflation continuing to run below the Committee's 2 percent longer run objective, the FOMC indicated in its June statement that it intends to carefully monitor actual and expected progress toward our symmetric inflation goal. Looking ahead, my colleagues on the FOMC and I expect with further gradual adjustments in the stance of monetary policy, the economy will continue to expand at a moderate pace over the next couple of years with a job market strengthening somewhat further and inflation rising to 2 percent. This judgment reflects our view that monetary policy remains accommodative.

Ongoing job gains should continue to support the growth of incomes and therefore consumer spending.

Global economic growth should support further gains in U.S. exports. And favorable financial conditions coupled with the prospect of continued gains in domestic and foreign spending and the ongoing recovery in drilling activity should continue to support business investment. These developments should increase resource utilization somewhat further, thereby fostering a stronger pace of wage and price increases. Of course, considerable uncertainty always attends the economic outlook.

There is, for example, uncertainty about when and how much inflation will respond to tightening resource utilization. Possible changes in fiscal and other government policies here in the United States represent another source of uncertainty.

In addition, although the prospects for the global economy appear to have improved somewhat this year, a number of our trading partners continue to confront economic challenges. At present, I see roughly equal odds that the U.S. economy's performance will be somewhat stronger or somewhat less strong than we currently project.

I will now turn to monetary policy. The FOMC seeks to foster maximum employment and price stability as required by law. Over the first half of 2017, the Committee continued to gradually reduce the amount of monetary policy accommodation. Specifically, the FOMC raised the target range for the Federal funds rate by one-quarter percentage point at both its March and June meetings, bringing the target to a range of 1 to 1¼ percent. In doing so, the Committee recognized the considerable progress the economy had made and is expected to continue to make toward our mandated objectives.

The Committee continues to expect that the evolution of the economy will warrant gradual increases in the Federal funds rate over time to achieve and maintain maximum employment and stable prices. That expectation is based on our view that the Federal funds rate remains somewhat below its neutral level. That is the level of the Federal funds rate that is neither expansionary nor contractionary and keeps the economy operating on an even keel. Because the neutral rate is currently quite low by historical standards, the Federal funds rate would not have to rise all that much further to get to a neutral policy stance. But because we also anticipate that the factors that are currently holding down neutral rate will diminish somewhat over time, additional gradual rate hikes are likely to be appropriate over the next few years to sustain the economic expansion and return inflation to our 2 percent goal. Even so, the Committee continues to anticipate that the longer run neutral level of the Federal funds rate is likely to remain below levels that prevailed in previous decades.

As I noted earlier, the economic outlook is always subject to considerable uncertainty, and monetary policy is not on a preset course. FOMC participants will adjust their assessments of the appropriate path of the Federal funds rate in response to changes to their economic outlooks and to their judgments of the associated risks as informed by incoming data.

In this regard, as we noted in the FOMC statement last month, inflation continues to run below our 2 percent objective and has declined recently. The Committee will be monitoring inflation developments closely in the months ahead.

In evaluating the stance of monetary policy, the FOMC routinely consults monetary policy rules that connect prescriptions for the policy rate with variables associated with our mandated objectives.

However, such prescriptions cannot be applied in a mechanical way. Their use requires careful judgments about the choice and measurement of the inputs into these rules as well as the implications of the many considerations these rules do not take into account.

I would like to note the discussion of simple monetary policy rules and their role in the Federal Reserve's policy process that appears in our current Monetary Policy Report.

Let me now turn to our balance sheet. Last month, the FOMC augmented its policy normalization principles and plans by providing additional details on the process that we will follow in normalizing the size of our balance sheet.

The Committee intends to gradually reduce the Federal Reserve's security holdings by decreasing its reinvestment of the principal payments it receives from the securities held in the System Open Market Account. Specifically, such payments will be reinvested only to the extent that they exceed gradually rising caps.

Initially, these caps will be set at relatively low levels to limit the volume of securities that private investors will have to absorb. The Committee currently expects that, provided the economy evolves broadly as anticipated, it will likely begin to implement the program this year.

Once we start to reduce our reinvestments, our securities holdings will gradually decline, as will the supply of reserve balances in the banking system.

The longer run normal level of reserve balances will depend on a number of as-yet-unknown factors, including the banking system's future demand for reserves and the Committee's future decisions about how to implement monetary policy most efficiently and effectively. The Committee currently anticipates reducing the quantity of reserve balances to a level that is appreciably below recent levels but larger than before the financial crisis.

Finally, the Committee affirmed in June that changing the target range for the Federal funds rate is our primary means of adjusting the stance of monetary policy. In other words, we do not intend to use the balance sheet as an active tool for monetary policy in normal times.

However, the Committee would be prepared to resume reinvestments if a material deterioration in the economic outlook were to warrant a sizable reduction in the Federal funds rate. More generally, the Committee will be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the Federal funds rate.

Thank you. I would be pleased to take your questions.

[The prepared statement of Chair Yellen can be found on page 56 of the appendix.]

Chairman HENSARLING. The Chair now recognizes himself for 5 minutes for questions.

Chair Yellen, the first question I have is with respect to the 2 percent inflation target that was adopted several years ago. I must admit as an aside, a back-of-the-envelope calculation tells me that nominal prices will double every generation. I am still trying to figure out how that is commensurate with price stability, but that is not my question.

In a recent press conference, some interpreted comments that you made to indicate that you were open to an increase in the inflation target. Are you pursuing an increase in the inflation target? Are other members of the FOMC? Is this a matter of discussion within the FOMC to increase the 2 percent inflation target?

Mrs. YELLEN. It is not. We reaffirmed our 2 percent inflation target in January. We are very focused on trying to achieve our 2 percent inflation target, and it is not a subject of discussion.

Chairman HENSARLING. Thank you. I will take "no" for an answer.

As you heard in my opening statement, I remain concerned, as do other Members, about a blurring between the lines of monetary policy and fiscal policy, specifically credit allocation. We feel that ultimately this could impede upon the Fed's independence. Professor Marvin Goodfriend of Carnegie Mellon,, whom I think you may be familiar with, gave what I thought was an instructive distinction between monetary and fiscal policy. And he said, "Monetary policy does not favor one sector of the economy over another, and monetary policy does not involve taking credit risk onto the Fed's balance sheet."

By contrast, he went on to say: "Credit policy works by interposing the government's creditworthiness, the power to borrow credibly against future taxes between private borrowers and lenders to facilitate credit flows to distressed borrowers. Fed credit policy involves lending to private institutions or acquiring non-Treasury securities with freshly created bank reserves or proceeds from the sale of Treasuries from the Fed portfolio."

I guess my question is, Chair Yellen, do you agree with this distinction? And if you don't agree with this distinction, do you feel that credit policy is commensurate with your Congressional mandate?

Mrs. YELLEN. The FOMC, in its principles for normalization of monetary policy, has clearly indicated that it intends to return over time to a primarily Treasury-only portfolio, and that is in order not to influence the allocation of credit in the economy.

That said, our purchases of mortgage-backed securities took place after a financial crisis when the market for mortgage-backed securities was not working at all well, and I believe it was appropriate. But we have endorsed the principle—

Chairman HENSARLING. I understand that.

Mrs. YELLEN. —of returning to a Treasury portfolio.

Chairman HENSARLING. So do you or do you not associate yourself with Professor Goodfriend's comments? Is that a useful distinction to you as he articulated?

Mrs. YELLEN. I think it is a useful distinction.

Chairman HENSARLING. Okay. Thank you.

It is my understanding that the Fed can legally purchase student debt guaranteed by the Federal Government, and municipal debt that matures in less than 6 months. Is that your understanding as well?

Mrs. YELLEN. I am not sure about student debt. We are able to purchase Treasury and agency securities.

Chairman HENSARLING. Has the FOMC ever discussed the possibility of purchasing either student debt or municipal debt?

Mrs. YELLEN. Not to the best of my knowledge.

Chairman HENSARLING. Finally, in this part of the questioning, am I led to believe, then, that your balance sheet reduction will allow you to return the Fed funds rate as a primary policy instrument instead of interest on reserves? Is that my understanding from your testimony?

Mrs. YELLEN. We are reliant on interest on excess reserves as our key tool for setting the Federal funds rate. So that is a key instrument of monetary policy. But what I said is that we intend to rely on adjustments through interest on reserves through our Fed funds rate target as a means of regulating—

Chairman HENSARLING. My time is rapidly winding down. I was very heartened to see in your report a comparison of Fed policy with a number of policy rules. I think this is very helpful, Chair Yellen. I would say, though, that, in some respects, your report says how the FOMC differed from these policy rules, but it does not say why. In order to give the broadest amount of information to the markets so that people can plan their lives, I would simply encourage you to perhaps go even further and discuss why the actual FOMC policy differed from these policy rules. I think that would be very encouraging, if you would have a brief comment on that.

Mrs. YELLEN. Let me just say that I am very pleased that you, the committee, found the material on rules useful, and we look forward to working with you to provide further information that would be useful to the committee.

Chairman HENSARLING. Thank you.

I now recognize the ranking member for 5 minutes.

Ms. WATERS. Thank you, Mr. Chairman.

As part of the Federal Open Market Committee's, "Statement on Longer-Run Goals and Monetary Policy Strategy," the Committee states that it would be concerned if inflation were running persistently above or below its 2 percent objective. Given that core inflation has been below the Fed's 2 percent target for more than 5 years and is currently at 1.4 percent, what is the Fed's rationale for further raising rates at this time? If the 2 percent market truly is symmetric, shouldn't the Federal Open Market Committee be willing to allow inflation to begin rising closer to its 2 percent target before it is able to justify additional rate increases?

Mrs. YELLEN. Let me say that we are very committed to achieving our 2 percent inflation objective and are well aware that, for a number of years, we have been running under that and recognize that there are dangers that would be associated with persistent undershoots of our inflation objective, and it is a symmetric inflation objective; 2 percent is not a ceiling. It is a symmetric objective.

Now, I would say with respect to the inflation outlook, although inflation has been running below 2 percent, earlier this year, on a 12-month basis, core inflation had reached 1.8 percent and headline inflation came close to 2 percent.

We have seen increasing strength in the labor market that continues, and although there are lags in this process, I believe that is something that over time will put upward pressure on both wages and prices.

Now, for several months running, we have seen unusually low inflation readings. As I mentioned, there appear to be some special factors that partly account for that. For example, quality-adjusted prices of cell phone plans plunged several months ago, and prescription drug prices also plunged.

Some temporary factors appear to be at work. Nevertheless, our 12-month inflation rates will remain low until those factors drop out. But I would say it is premature to reach the judgment that we are not on the path to 2 percent inflation over the next couple of years.

As we indicate in our statement, it is something that we are watching very closely, considering risks around the inflation outlook. To my mind, a prudent course is to make some adjustments as long as our forecast is that we are heading back to 2 percent.

But monetary policy is not on a preset course. We are watching this very closely and stand ready to adjust our policy if it appears that the inflation undershoot will be persistent.

Ms. WATERS. Thank you very much.

I would like to move on to ask you a question about Deutsche Bank. First, I would like to commend you and your colleagues at the Federal Reserve for recently fining Deutsche Bank, a top creditor of the President and his immediate family, for its failure to comply with anti-money-laundering requirements. I would like to learn a bit more about what you may have discovered in the course of your investigation of Deutsche Bank. Were you able to verify that Deutsche Bank had completed its own internal review of a Russian mirror trading scheme that took place from 2011 to 2015? And, separately, as part of the Fed's supervision of Deutsche Bank's anti-money-laundering compliance, can you comment on the due diligence that the bank conducted on the accounts of President Trump and his immediate family members, given the high-profile nature of their accounts?

Mrs. YELLEN. We issued an enforcement action against Deutsche Bank for violations of Bank Secrecy Act anti-money-laundering procedures in the United States, and that was based on our own investigations.

The mirror trades that you referred to occurred outside the United States. Recently, the U.K. FCA took an action against Deutsche Bank for those trades. Those are not ones that we are involved in looking at, and we haven't, of course, in the course of our investigations, looked into individual transactions with the President.

Ms. WATERS. That was one of two reviews that was done on Deutsche Bank, the mirror trading and the high-profile politicians or elected officials review. Are you familiar with that?

Mrs. YELLEN. I am not familiar with the details. Our focus has been on the safety and soundness of the operations of Deutsche in the United States.

Ms. WATERS. Thank you.

I yield back.

Chairman HENSARLING. The gentlelady yields back.

The Chair now recognizes the gentleman from Kentucky, Mr. Barr, chairman of our Monetary Policy and Trade Subcommittee.

Mr. BARR. Thank you, Mr. Chairman.

And, again, welcome back, Chair Yellen, welcome back. And we welcome the decision, the announced intentions of the Fed to begin the process of reducing the size of its oversized portfolio. But in terms of the plan and in terms of portfolio composition and balance sheet normalization, why does your plan contemplate rolling off Treasury securities at a faster pace than mortgage bonds?

Mrs. YELLEN. The differences are relatively slight. My expectation is, although one can't be certain of what the prepayments of principal will be on mortgage-backed securities, that ultimately our caps on reinvestment of mortgage-backed securities will not be binding, that they will only come into play in exceptional circumstances.

So, once we have phased in those caps, I don't expect them to be binding. The Treasury market is very deep and liquid. It is a huge market. Our intention in gradually phasing up these caps is to avoid disruption, and we are comfortable—

Mr. BARR. Thank you for that.

And this kind of gets to the question of credit allocation. Let me move on quickly to the issue of the Fed's use of interest on excess reserves as a monetary policy tool.

The Fed is now paying banks 1¼ percent on their reserve balances, and if the Fed follows through with its normalization plans, the Fed will be paying banks a higher interest rate on their reserves sometime later this year. These interest rates, as I said in my opening statement, provide banks with a government subsidy to not lend out their reserves.

Does the Fed have any evidence that banks are passing on these higher interest on excess reserves rates to their customers in the form of higher interest rates on customer deposits?

Mrs. YELLEN. My impression is that, on larger deposits, on CDs, we are beginning to see some upward movement in the rates that are available to customers, but not on retail deposit accounts.

My expectation is, although there will be a lag, that, as the general level of short-term interest rates rise, that competition among banking organizations will begin to put some upward pressure on those rates, and—

Mr. BARR. And we looked at what some of the big banks pay on customer deposits: one basis point for many of them, multiple institutions paying only one basis point on customer deposits. And the Fed is paying 125 basis points. And so it doesn't appear as though any of this pass-through is happening to customer accounts, and that might compel the Fed to reconsider the merits of its IOER policy.

Wouldn't it be better for growth if banks were encouraged to deploy more capital in the real economy instead of just parking it at the Fed in exchange for IOER?

Mrs. YELLEN. I don't see banks as parking it at the Fed and not lending. My discussions with bankers and the information that we regularly collect suggests that banks are looking to make loans. There was a period of very slow loan growth at the beginning of the year, but our survey suggests that it was more a matter of demand than supply.

So, remember, our interest on reserves is at a very low level—

Mr. BARR. Yes, ma'am. I would just interject an editorial comment, which is that the dilemma that the Fed now appears to face is that lowering interest on excess reserves, of course, would decrease the Fed funds rate, but normalization would also entail moving back to the conventional open market operations.

Let me, finally, in my limited time left, talk to you a little bit about the limits of monetary policy. Of course, we know we have been struggling overall with slow growth and low labor participation, even though unemployment has come down. And you talk a lot about substandard productivity. What many employers say to me is that they simply can't compete with the government for labor and that the government is paying people to not work.

And as you know, we are in the middle of this big debate in Washington about ObamaCare and whether or not we should reform Medicaid. Here is what Alan Greenspan, who calls you a first-rate economist, said, "You can't get growth going so long as entitlement expansion is anywhere near what it has been recently. It is eating up the sources of investment and the sources of growth, and you can't have it both ways. You cannot fund all of the entitlements everybody wants and expect that you are going to get a GDP out of that of 3 percent of more than the annual rate. The arithmetic just doesn't work."

Wouldn't you agree that the structure of our welfare programs, including ObamaCare, contain disincentives for work?

Chairman HENSARLING. A brief answer, please.

Mrs. YELLEN. To my mind, the major factor here is an aging population that is putting downward pressure on labor force participation. There are other factors that affect labor force participation as well, but the slow growth that we have and anticipate reflects in part an aging population and slow productivity growth.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from Wisconsin, Ms. Moore, the ranking member of our Monetary Policy and Trade Subcommittee.

Ms. MOORE. Thank you so much, Mr. Chairman.

Let me sort of pursue the question, Madam Chair, that Mr. Barr was raising with you with regard to paying people not to work, and he gave as an example Medicaid.

I just want to mention that two-thirds of the people who use Medicaid are in nursing homes and they are unable to work. I just want to point that out.

I also want to pursue some questions from you that the chairman seemed to be interested in some rules-based policy that the FOMC had put out there. And I want to note that, a couple of weeks ago, you were very critical of the Taylor Rule, one of the rules that seems to be favored by the leadership on this committee.

I was wondering if you could spend just a little time talking to us about your reservations about the Taylor Rule and the appropriate application of it?

Mrs. YELLEN. I don't believe that the FOMC should mechanically follow any single simple rule. But as we point out in the Monetary Policy Report, policy rules do embody some principles of sound monetary policy that should inform our policy decisions. And we have for several decades now looked at the recommendations of the Taylor Rule and a number of other different rules in deciding on the appropriate stance of policy.

As we try to point out in the report, there are many different rules. There is no clear way to decide which one is better than the others. They lead to a range of recommendations. So there is no single recommendation that comes out of a rules-based approach. And they require judgment in order to implement about measuring things like the GDP or output gap and particularly the neutral real level of interest rates, something that we have been struggling with, as has the professional economics community, now for many years, so—

Ms. MOORE. Thank you, Chair Yellen.

So the CHOICE Act is a bill that we pushed out of this committee, and it proposes sort of a rules-based monetary policy, and I want to know what your thoughts specifically are about that piece of legislation?

Mrs. YELLEN. I have said on many occasions that I am opposed to the requirements in the CHOICE Act.

Ms. MOORE. Okay. What about subjecting the Fed to the appropriations process?

Mrs. YELLEN. I would be very concerned about subjecting the Fed to appropriations. We, of course, want to start with saying that we are, obviously, operating in all that we do under Congressional mandates and laws. We seek to be transparent, to be accountable to Congress, and to communicate as clearly as we can the basis for our actions in monetary policy and also in supervision. But I do think our independence in setting our own appropriations—

Ms. MOORE. Thank you for that, Madam Chair.

Mrs. YELLEN. —are safeguarded.

Ms. MOORE. I want to go back to the limitations that the FOMC has with regard to closing the disparity and the gap of recovery for

African Americans, and lower-income Whites. There is only so much you can do. So I was wondering if you would agree that some of the austerity measures that Congress accounts—we place—saying we are paying people not to work when, actually, people who receive food stamps are old people, disabled people, children, people on Medicaid. Would you say that Congress needs to step up on the appropriations side doing things for lower-income people to subsidize wages, that that is a better tool than what the Fed has to offer in closing those gaps?

Mrs. YELLEN. As you indicated in your opening statement, monetary policy is a blunt tool, and it is not something that we can use to achieve distributional objectives. Although, as we point out in the report, a strong labor market does benefit all groups, and particularly minority groups, although the experience is worse for them.

So, yes, I think it is absolutely appropriate for Congress to consider appropriate fiscal policy and how it might be used to advance those objectives.

Ms. MOORE. Thank you so much.

And my time has expired.

Chairman HENSARLING. The time of the gentlelady has expired.

The Chair now recognizes the gentleman from New Mexico, Mr. Pearce, chairman of our Terrorism and Illicit Finance Subcommittee.

Mr. PEARCE. Thank you, Mr. Chairman.

And thank you to the Chair for being here. We always appreciate your visits.

Now, I note in your comments today you are talking about the labor force participation rate, and in the past, I think you and I have had an opportunity to discuss that, and it was not something I have seen to be a concentration on the part of the Feds before now—and it is now.

What changed that it has become a bigger concentration for you all?

Mrs. YELLEN. It is important for us to try to determine how much slack there is in labor markets, how much potential—

Mr. PEARCE. Sure. I understand that, but that was important before, and there didn't seem to be any comments from you. And, in fact, in 2016, it was just a number that didn't come readily to your mind when you were in front of the committee here. I just wondered what has changed since January that you would now be concentrating on that?

Mrs. YELLEN. I think I was discussing this last year, because it is a source of uncertainty after a very long and deep recession. We want to understand what potential there is for people to come back. And as I mentioned in my testimony, labor force participation rate has been—

Mr. PEARCE. No. I appreciate that. If I could grab back my time now. I am going through the Monetary Policy Report here, and I am going through your comments, and I almost don't see anything about that number on the screen behind you that is just constantly rolling there, and it is a debt, and maybe it doesn't mean anything, and maybe it does. Do you all ever talk about that in your Committee? Do you ever contemplate that in your position?

Mrs. YELLEN. I have discussed this previously with this committee and others.

Mr. PEARCE. I understand, but we didn't note it in the report today as one of the driving factors and something we ought to be thinking about.

So how did it affect you all when Illinois was downgraded—their bond rating was downgraded the 1st of the year, and they are paying what one analyst said is the highest differential in our history? Now, the reason they are having to pay more and the bonds are being downgraded is because they can't afford to pay the bills, basically. And if you hold their bonds, you may not get paid.

If you went back to Detroit when it filed bankruptcy, bondholders only got 74 percent on the dollar. And it all feeds back toward this number here and the fact that it doesn't even make the print, not even the fine print that I can find. Maybe I missed it, but I did see the one sentence about Illinois being downgraded, and there was a brief discussion of Puerto Rico.

But the idea that we as a country are not discussing our ability to pay our bills is something that, I think, there is a downside effect to the problem, but the fact that your report doesn't bring it up is a little concerning to me.

And the way that really played out was a couple of weeks ago when Chicago schools tried to issue a bond rating and they didn't get any bidders at all, none. So they ended up driving the rate up to 7, 7½, 7¾ or something. But it seems like the people in charge of the financial stability of the country, the value of our dollar, the value of our promises to pay, it just seems like it would have a little bit more importance in the document here.

I would expect, frankly, maybe a whole chapter, because there are estimates that we can't pay our bills in this country, and so we continue to operate as if—as if it is not going to matter if our ratings are downgraded. If our interest rate goes up—we are already running deficits, which means we have to print the money every year in which to operate, and it seems like that the people in charge of the system would be talking about it and postulating and telling us: Hey, this is kind of serious. Why don't we all work together and start figuring out what we can do to live within our means, to just make sure that we are not paying triple and quadruple what other people are paying for debt? I don't know. I would love to hear your comments.

Mrs. YELLEN. Let me state it in the strongest possible terms that I agree that what you are showing here represents a trend that, given current spending and taxation decisions, is going to lead to an unsustainable debt situation with rising interest rates and declining investment in the United States that will further harm our productivity growth and living standards.

I believe a key thing that Congress should be taking into account in designing fiscal policy is the need to achieve sustainability of this debt path over time. This is something I am not just saying today but have been emphasizing for some time in my testimony.

Mr. PEARCE. Thank you very much.

I yield back, Mr. Chairman.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from New York, Mrs. Maloney, ranking member of our Capital Markets Subcommittee.

Mrs. MALONEY. Chair Yellen, as you mentioned earlier, inflation has not been moving up as quickly as the Fed had been expecting. And given that the labor market has continued to tighten and inflation still hasn't increased to the Fed's target of 2 percent, do you think the Fed should wait to see some improvement in the inflation outlook before it starts the process of balance sheet normalization by phasing out the Fed's reinvestment policy, or, in other words, are your plans for the timing of balance sheet normalization unchanged?

Mrs. YELLEN. We have been trying to very carefully lay out our plans to normalize the size of our balance sheet in a gradual and predictable way. And my colleagues made the judgment in June when we laid out the final details that, if the economy continues to evolve in line with our expectations, that it is something that we should begin to do this year and, to my mind, I would say relatively soon.

The exact timing of this I don't think matters a great deal. It is something we have long been preparing to undertake.

As I mentioned earlier, we are watching inflation very carefully. I do believe that part of the weakness in inflation represents transitory factors but will recognize inflation has been running under our 2 percent objective, that there could be more going on there. It is something that we will watch very carefully and will be a factor in our future decisions about rate increases.

Mrs. MALONEY. Thank you.

As you know, your term as Fed Chair ends in 2018. And there is a long history of Presidents renominating Fed Chairs that their predecessors had originally named. Ronald Reagan renominated Paul Volcker. Bill Clinton renominated Alan Greenspan. And President Obama renominated Ben Bernanke.

So my question is, are you open to serving another 4 years as Fed Chair if President Trump decides that he wants to renominate you?

Mrs. YELLEN. What I previously said is that I absolutely intend to serve out my term. I am very focused on trying to achieve our Congressionally mandated objectives, and I really haven't had to give further thought at this point to this question.

Mrs. MALONEY. When the Fed does start the process of balance sheet normalization, are you less likely to raise interest rates at the same time, or do you view these two actions as being on separate tracks?

Mrs. YELLEN. The path for the Federal funds rate is a decision for the Committee, and they have made no decision about whether or not both things could occur at the same time.

I would note that in June, at our most recent meeting, we produced the, "Summary of Economic Projections," which appears in the Monetary Policy Report. Most of my colleagues or at least the median anticipated that one further increase in the Federal funds rate would likely be appropriate this year, but as I say, we constantly watch the economy, the evolution of inflation, and the labor market, and we will make decisions on the basis of our evaluation of that information.

Mrs. MALONEY. The Fed has suggested that the stock market is currently overvalued. Are there other markets that you consider or see as overvalued as well, and do you think a correction in any of these markets would cause problems for financial stability?

Mrs. YELLEN. In looking at asset prices and valuations, we try not to opine on whether they are correct or they are not correct. But on—as you asked what the potential spillovers or impacts on financial stability could be of asset price revaluations, my assessment of that is that, as asset prices have moved up, we have not seen a substantial increase in borrowing based on those asset price movements. We have a financial system, a banking system that is well-capitalized and strong, and I believe it is resilient.

Mrs. MALONEY. Okay. Thank you.

Chairman HENSARLING. The time of the gentlelady has expired.

The Chair now recognizes the gentleman from Missouri, Mr. Luetkemeyer, chairman of our Financial Institutions Subcommittee.

Mr. LUETKEMEYER. Thank you, Mr. Chairman.

And thank you, Madam Chair, for being here today.

As chairman of the Financial Institutions Subcommittee, one of my jobs and my greatest concerns is the regulatory oversight by the various financial services agencies.

Chair Yellen, when it comes to the Fed's supervisory role, I want to renew my call and the calls of so many of my colleagues that the Fed take a more measured approach and withhold any new regulation until the nominee for Vice Chair for Supervision has been confirmed by the Senate.

I do appreciate some of your comments and the comments of your colleagues, particularly Governor Powell, on issues such as the treatment of margin on the supplemental leverage ratio and on CCAR testing. Issues like these have a very real impact on the economy. I think it is wise that the Fed ease the associated burdens. You recall I sent you a letter on CCAR. Your response to me indicated that, while you understood my concerns, the Fed wasn't necessarily looking to curtail some of its stress-test-related activity.

So, now that the Vice Chair of Supervision has been named, I will again ask that the Fed hold off on imposing any new supervisory burdens before the individual is in place, and I would just ask for a response to these statements and concerns.

Mrs. YELLEN. We have a relatively light regulatory agenda at this point. I am pleased to see a nomination. Clearly, we will look very carefully at the whole set of issues around regulatory burden.

Mr. LUETKEMEYER. Okay.

Mrs. YELLEN. And I look forward to having the input of that individual if he is confirmed.

Mr. LUETKEMEYER. Okay. Thank you.

To that end, I also want to mention that I am very supportive of many provisions included in the recent Treasury report. I hope that the Federal Reserve is taking some recommendations seriously. Have you read the report yet? Are you aware of it?

Mrs. YELLEN. Yes, I have read the report, and there are many very useful and productive suggestions that mirror things that we have been thinking and doing ourselves with respect to tailoring of our regulations, reducing burdens on community banks. I think the recommendations pertaining to the Volcker Rule and looking for ways to reduce burdens are all very useful.

There are a few points where we have a different view and a lot in it that is very useful.

Mr. LUETKEMEYER. I look forward to working with you on that because, while our Legislative Branch of the Government is a check on the Executive Branch and agencies, we want to work with you to try and improve the ability of our banks to be able to do the job of helping their communities grow.

And I am glad you mentioned community banks because I have a quick story here for you, and I would like your response to it. I have shared this story with the committee in the past with regard to Mid America Bank & Trust. It's a small bank in my district that has been caught in Federal Reserve purgatory for the last 5 years. Your agency has blocked the merger and acquisition of this institution because of concerns over certain products, the same products that have actually been encouraged by the FDIC and the State of Missouri's Division of Finance.

Your staff has forced this bank through the years to produce document after document, which they have done. And the bank has made now several offers to remediate, but the Fed has rejected them. Mid America has spent more than $2 million in legal fees. And this is a small bank; they really can't afford to do this. And this process has to stop. The Federal Reserve, after 5 years, owes this institution a determination of whether they can get this done.

So my first question is, are you aware of this case?

Mrs. YELLEN. I am aware of this case.

Mr. LUETKEMEYER. Okay. What can be our expectation of the resolution of this?

Mrs. YELLEN. I am not prepared today to comment in detail on what is a confidential supervisory matter, but there have been a set of complicated issues pertaining to consumer—

Mr. LUETKEMEYER. Madam Chair, with all due respect, I understand where you are coming from. The bank on my side is very open about what their problems are, their concerns are. We have an elderly individual who has medical problems who wants to divest themselves of this bank. They have a very viable, well-structured, well-financed, well-capitalized bank that wants to take them over. And basically what is happening here is a very punitive way of going about punishing this bank for a product that was something that the Fed didn't like, quite frankly.

And so the 5 years this has gone on is enough, and the opaque rules and the unwillingness of the Fed to work cooperatively with the banks and their attorneys and the regulators is not something we can continue to go and support. And this is why I asked the question when we started back with the Treasury report. The Treasury report has, I think, some solutions to some of the problems that regulatorily we have. And that is the punitive nature of some of the actions taken by some of the agencies, including yours.

And so I think it has to stop. We want to work with you to find ways to increase the ability of these community banks to be able to improve their communities and help their economies grow, and we look forward to that.

And, with that, I yield back. Thank you, Mr. Chairman.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Minnesota, Mr. Ellison.

Mr. ELLISON. Good morning, Chair Yellen.

Thank you for being here today. Let me start out by saying I am really happy about the appointment of Raphael Bostic as president of the Federal Reserve Bank of Atlanta. He meets the legal mandates, and he has great expertise, and also, he increased the number of African-American bank presidents from none to one, which I think is important. And so thank you for that.

Mrs. YELLEN. Yes.

Mr. ELLISON. We debate around here a lot of the cause of slower growth over the last several years. You have already been exposed to some people's theories as to why we have slower growth, but I was intrigued by this book I read recently called, "Makers and Takers." I don't know if you are familiar with this particular book, but it is a book that really talks about the financialization of the economy.

And I guess I would like to just get your take on it. The author of the book notes that one reason for lower productivity and lower wages is the outsized profits earned by some in the financial services sector—banking, real estate, insurance, hedge funds, Wall Street. And, in fact, the author, whose name is Rana Foroohar, and she has the stat up there on the screen that I would like you to just take a look at. She says that while the financial sector is a little less than 7 percent of the economy, it provides about 4 percent of the jobs but earns a whopping 25 percent of corporate profits. Twenty-five percent of corporate profits is a lot of money. And so, as a result, you see money flowing into those sectors rather than plant and equipment and the other sectors of the economy that might lend themselves to greater employment.

Do you have any take on that? Do you have any impressions about that particular theory?

Mrs. YELLEN. The financial sector has grown in importance relative to the U.S. economy, but my sense is that if we look at the plight with respect to wages and jobs of middle-class families who have seen diminishing opportunities and downward pressure on their wages, that we have to take account of factors, such as technological change that have eliminated many middle-income jobs, and globalization that has reinforced the impact of technological change, and that those things have to be an important piece of understanding what has happened.

Mr. ELLISON. I am sure that technology does play some role, but we have always had technology, haven't we? When we went from horse-drawn carriages to cars, people who made horseshoes had to find something new to do. So I am always a little skeptical when I hear people say technology. We have always had technology. We have also had more employment.

But we have had kind of this slow growth period, and we have had some people say: Well, it is because people don't want to supply labor because they are living too good on welfare.

Also, is it possible that the financial services sector is sort of channeling investment into financial activity and not into agricultural and manufacturing services to actually employ people?

So I will give you an example. If you look at Sears Department Store, it is closing about 250 stores this year. That means thousands of Sears and Kmart employees are going to lose their jobs, and hundreds of communities will lose retail access. Of course, you could point to technology. I am sure that is part of the explanation, but can you share some ideas or point to some analysis to explain why the retail sector is being hit so hard? You could say Amazon, but I am doubtful that explains the whole problem. Do you have any specific information on the role that finance might be playing in part of these decisions? And that investors demand outsized returns that demanded companies like Sears fire workers, sell real estate so that you can have better returns on financial equities.

Mrs. YELLEN. I don't have anything specifically for you on that. I would be happy to take a look. I would point out that, for many years, many American companies have been sitting on a lot of cash.

Mr. ELLISON. Yes.

Mrs. YELLEN. —and have been unwilling to undertake investment in plant and equipment of the scale that we would ideally like to see. So I think there are a number of different things going on.

Mr. ELLISON. Thank you very much.

I yield back my time.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Michigan, Mr. Huizenga, chairman of our Capital Markets Subcommittee.

Mr. HUIZENGA. Thanks, Chair Yellen. It is good to have you here. I appreciate the opportunity. And I was not expecting to do this, but I want to touch briefly on something that Chairman Barr had talked about, the labor workforce participation. These are U.S. Bureau of Labor Statistics civilian labor force participation rates. This was a study released by the St. Louis Fed. I am sure you are familiar with it: fred.stlouisfed.org. That was June 17th, and it clearly shows that what I heard you say is sort of these disappointing levels of labor force participation are unavoidable because of an aging demographic, and I wish I had the chart that I was able to put up, but it seems to me what is most concerning is this drop in participation really comes from youngest Americans, and, in fact, that chart, again released by the Fed of St. Louis, shows the highest levels we have seen since the 1960s for Americans aged 55 and older. And it seems to me this argument that our economy hasn't responded the way that it has, we talked about this actually the last time you were here, and I think I labeled it flim-flam, not in a disrespectful way, but it was clearly not what some of those statistics are showing.

What I want to talk about, though, quickly is that, during your semiannual testimony before this committee in 2015, you were asked about concerns regarding the lack of liquidity in certain fixed-income markets, and you stated that, "It is not clear what is happening in these markets and what is causing what." You continued that, "We don't see a problem,'" but that it was something that you needed to study further.

So my question is, has there been additional study and follow-up by the Fed on that particular issue?

Mrs. YELLEN. That is something that we continue to look at. We provide this committee with regular reports, particularly pertaining to corporate bonds. There have been a number of studies inside the Fed and also outside of it that show no clear pattern, some suggestions that regulations may be negatively impacting liquidity but other studies reaching different conclusions.

Mr. HUIZENGA. So you don't believe there are problems in the fixed-income markets?

Mrs. YELLEN. The inventories of bonds held by some of the largest banks and market makers have declined. On the other hand, bid-ask spreads are low. Corporate bond issuance has been healthy. The market has done well.

Mr. HUIZENGA. But isn't it true we don't know whether those bid-ask spreads are really there because there is a lack of transparency?

Mrs. YELLEN. It is hard to draw conclusions purely based on that.

Mr. HUIZENGA. We are going to actually be exploring this in my Capital Markets Subcommittee on Friday. We have a hearing on fixed-income markets really just trying to find out what is going on. So maybe we can help you with some of that analysis with some testimony from here, but we need to have that investigative effort by the Fed on this, as well.

I quickly want to move on. Former Fed Governor Tarullo suggested in a speech that, "A new regulatory paradigm is needed to expand fiduciary duties of directors of banking institutions."

He posed the question whether existing modes of financial regulation could be further supplemented by modifying, "the fiduciary duties of the boards of regulated financial firms to reflect what I have characterized as regulatory objectives." Specifically, Mr. Tarullo believed that, "Special corporate governance measures are needed as part of an effective prudential regulatory system." And he argues that traditional fiduciary duties focused on shareholders are inadequate for banking institutions. So we are not talking about DOL or any of the other fiduciary side of this. This is for banking institutions. Do you agree with his recommendations?

Mrs. YELLEN. Those are his personal recommendations.

Mr. HUIZENGA. So, is that a "no?"

Mrs. YELLEN. I am not prepared to say that I agree with all of those recommendations. We are focused on trying to clarify expectations for boards of directors to distinguish what the important role that they have in the banking organization and what is the job of senior management versus a board of directors.

Mr. HUIZENGA. That would be a concern that I have here is, what expertise the Fed has on corporate governance issues like fiduciary duties of corporate boards, and, frankly, under what legal authority does the Federal Reserve seek to preempt State corporate governance requirements, as well as a number of things?

I appreciate your answer, and thank you for being here.

Chairman HENSARLING. The time of the gentleman has expired. The Chair now recognizes the gentleman from Colorado, Mr. Perlmutter, ranking member of our Terrorism and Illicit Finance Subcommittee.

Mr. PERLMUTTER. Good morning, Madam Chair, and thank you for being here, and thank you for being a steady hand at the Federal Reserve.

Mrs. YELLEN. Thank you.

Mr. PERLMUTTER. And you must be doing an okay job because I have listened to my friends, my Republican friends, who generally have very crisp, sharp, piercing, probing, and accusatory questions. They don't have those today because things are going pretty well.

In Colorado, I want to thank you. We were in the real dumps 8 years ago—10 percent unemployment, housing crashing with foreclosures through the roof. In my district, we are at 2.1 percent unemployment; the State, generally, 2.3 percent. And I know that is not the same for some of the parts of my State a little tougher, and I know across the Nation, but generally things have been steady, and I want to thank you and the policies of the Fed for helping us get out of what was a very bad situation.

Mrs. YELLEN. Thank you for that.

Mr. PERLMUTTER. I have a a couple of questions. First, there is a guy who has been pretty dogged in telling me that we need to shrink the Fed's accommodative policies, and he is in the audience today. So explain to me—he is right directly behind you a couple of rows. And he has been very firm over these years in wanting me to press you on this. So would you explain to me how you plan to shrink the accommodative policies that we took back in 2008, 2009, and 2010?

Mrs. YELLEN. The Federal Reserve was dealing for many years with an economy with very high unemployment and inflation running below our 2 percent objective. We did everything that we possibly could to try to achieve the goals that we have been assigned by Congress, namely maximum employment and price stability. We were constrained in our ability to use short-term interest rates as a tool, and so we used our balance sheet and undertook other measures to try to stimulate the economy. And I believe we have been succeeding. While inflation is still running below our 2 percent objective, the labor market, as you pointed out, is much healthier. The unemployment rate is now even running a little bit under levels that we regard as sustainable in the longer run. I think that is entirely appropriate, given that inflation is running below our objective.

So, as the economy improves and we come closer to achieving our objectives, we see it as appropriate to begin to gradually remove accommodation and move to a neutral stance. As I have said on many occasions, the new normal with respect to what level of interest rates is neutral appears to be rather low. So we have raised the Federal funds rate target. I believe policy remains accommodative, but given how low estimates of the neutral Federal funds rate are now, namely levels of the funds rate that would just be consistent with sustaining the strong labor market over time, we perhaps have some further moves that we envision making. If the economy proceeds along the path it is on, we anticipate that neutral may move up some, although remaining at low levels, and that generates a view that, over time, we may want to increase the funds rate a bit more, but that all really depends on how things evolve.

Mr. PERLMUTTER. Let me change the subject really quick. And on page 12 of the report, there are two words that I have never seen in any of your reports, and it is "abysmal performance," and it is as to productivity developments in the advanced economics. That is the section. And the combination of technology and advances in science and everything else coupled with labor, we are seeing something—so it is in the second column: A number of potential explanations have been put forth for the abysmal performance of TFP, that there is a waning—oh, well, I am out of time. I thank you for your service. You are doing a heck of a job. Thank you very much.

Mrs. YELLEN. Thank you very much.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Wisconsin, Mr. Duffy, the chairman of our Housing and Insurance—

Mr. DUFFY. Thank you.

Chairman HENSARLING. —Subcommittee.

Mr. DUFFY. Welcome, Madam Chair.

My friends across the aisle seem to be relatively excited about lower unemployment, an economy that is picking up. Excited that the stock market and people's 401(k)'s are improving. And they want to give you a lot of high fives and back slapping. You get all the credit. What changes have you made since November 8th to kick-start this economy and make it grow that you weren't doing before November 8th?

Mrs. YELLEN. What changes have we made to kick-start the economy?

Mr. DUFFY. Yes.

Mrs. YELLEN. We have continued on the course that we have been on of normalizing the path of monetary policy as the economy continues to recovery—

Mr. DUFFY. You haven't changed anything really since November 8th. The real change has been we have a new President in the White House. I just make that point to my friends across the aisle to not get too excited on who should get credit for an improving economy.

But I do want to follow up on what my friend Mr. Huizenga was asking about, the gentleman from Michigan, in regard to the role that the Fed is playing in corporate board rooms in our financial institutions. You acknowledge you do have a role at the Fed in these board rooms. What role do you have? What are you doing?

Mrs. YELLEN. It is our job to make sure that banking organizations are operating in a safe and sound manner and have policies in place that ensure both their safe and sound management and compliance with Federal laws and regulations, and corporate boards play a critical role in ensuring the performance of financial institutions.

Mr. DUFFY. Isn't it fair to say though that virtually anything could fall under the umbrella of safety and soundness? Who is hired and who is fired and who is disciplined within a financial institution could fall under safety and soundness, right?

Mrs. YELLEN. I think it is important to—and we are going to try to do this.

Mr. DUFFY. That could fall under safety and soundness, right?

Mrs. YELLEN. Yes, it could.

Mr. DUFFY. And how capital flows, who a financial institution lends to could fall under the auspices of safety and soundness, right?

Mrs. YELLEN. Yes, it could.

Mr. DUFFY. In essence, the Fed, under the auspices of safety and soundness, could replace the board of directors who have a fiduciary duty to shareholders and actually take over boards all under the premise of safety and soundness.

Mrs. YELLEN. We believe the corporate boards play critical roles in ensuring—

Mr. DUFFY. A critical role, okay. What falls outside the scope of safety and soundness in a financial institution? Exactly.

Mrs. YELLEN. Probably anything that you mentioned would have some.

Mr. DUFFY. You can't give me an answer because everything falls under that scope, and that is a concern.

The Fed doesn't have a fiduciary duty to shareholders, and actually board members have potential civil and criminal liability in their service on a board. Does the Fed have any civil or criminal liability should things go wrong on a corporate board? Board members are liable, how about the Fed?

Mrs. YELLEN. We have supervisory responsibilities.

Mr. DUFFY. No, you do, but are those Fed members who are sitting in on board meetings potentially criminally or civilly liable for the decisions they push a board to make?

Mrs. YELLEN. Not to the best of my knowledge.

Mr. DUFFY. Mine either. That is concerning for us, and I am pushing you on this because you do have a supervisory role, and I want you to do a good job, but from the feedback that we get, the involvement that the Fed has in our corporate boardrooms has far surpassed I think the vision that any of us had in this room. And it concerns us.

Mrs. YELLEN. Let me say that we have talked to many corporate board members and understand that there has been an accumulation of a large number of items. We have indicated that board members along with senior management should be responsible for—

Mr. DUFFY. I don't believe you have the authority, Madam Chair.

Mrs. YELLEN. —and believe we should clarify—

Mr. DUFFY. I don't think you have the authority to make hiring and firing decisions, and that is the feedback that we have had from members.

My time has almost expired. If I could ask you one last question, do you anticipate that this will be your last time testifying before this committee?

Mrs. YELLEN. My term expires in February, and so—

Mr. DUFFY. That is a roundabout way of asking you—

Mrs. YELLEN. It may well be.

Mr. DUFFY. —are you seeking another term?

Mrs. YELLEN. I have not said anything about that. I intend to serve out my term and not—

Mr. DUFFY. I know we push you hard. I want to thank you for your service.

And I yield back. My time has expired.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Illinois, Mr. Foster.

Mr. FOSTER. Thank you, Mr. Chairman, and, Chair Yellen, for your service.

In the past I have sent letters to you and other Federal regulators and asked you in hearings before about the requirement that custody banks hold supplementary leverage ratio against deposits and at the Federal Reserve presumably because of worries that, in some future universe, the Fed deposits may become less safe and available than cash, which is a universe I don't enjoy contemplating.

I believe that the Federal Reserve deposits are exactly the sort of safe place for these large immediately callable cash positions that we should actually be encouraging because of the strength and reliability of the Federal Reserve as a counterparty.

Now, as you may be aware, we now have bipartisan legislation to require that prudential regulators provide relief for institutions that place cash with the Fed at the same time as providing significant flexibility for the regulators to deal with unusual circumstances.

So do you see any safety and soundness difficulties if this legislation were to go forward?

Mrs. YELLEN. I am not going to comment on the legislation, but we are looking at the supplementary leverage ratio because of the impacts that you mention. A leverage ratio was meant to be a backup, a backup supervisory device calibrated appropriately relative to risk-based capital requirements. And while, in general, I think risk-based capital requirements, especially for the largest and most systemic institutions, are at levels that I think are appropriate and I am comfortable with, it may be that the supplementary leverage ratio needs to be recalibrated relative to that, and I am very much aware of the problems you are mentioning, and we are considering how to address them.

Mr. FOSTER. Thank you.

And I would like to use a little of my time to just comment briefly in defense of my home State of Illinois in response to some of the remarks from my colleague from New Mexico. Every year, the citizens of Illinois write a check for approximately $40 billion to States largely in the Sun Belt and rural areas because, for every dollar of tax money, Illinois receives back only 75 cents of Federal spending.

In contrast, New Mexico receives $2.40 back for every dollar of tax money.

And so this check that we write for $40 billion a year, had it been put into a rainy day fund instead of redistributed to other States in the Union, would have resulted in a balance in that rainy day fund in excess of $1.5 trillion today.

And so that I think that, when people discuss the fiscal problems of Illinois, the starting point should be there.

Now, I would like as my—finally, I would like to—I co-Chair a Future of Work Task Force for the New Democrat Coalition, and we are looking at the effects of technological and other changes that might occur in our workforce in the coming years and what policies we should adopt to remediate the bad side of those effects.

There is a lot of discussion now about why inflation is not increasing as you would have guessed in the past, particularly wage inflation. In the past, when the gap, the gap closed up in the job market, that very rapidly employers would start bidding up wages. That doesn't appear to be happening the way it used to, and one of the explanations that is suggested for that is that employers have the opportunity, instead of just bidding up wages, to simply invest in technology that replaces jobs.

I was wondering if you think there is a reasonable chance that you are going to have to change your macroeconomic models to reflect the loosening of the link between the closeness of the—the tightness in the job market and the increase in wages.

Mrs. YELLEN. We are seeing attenuated links, I think, between the labor market and wages, but even to a greater extent prices and inflation. The relationship between those two things has become more attenuated than we have been accustomed to historically and—

Mr. FOSTER. In general, when the robots show up, they show up as low prices. If you ask the average farmer what forced them to consolidate, they don't say it is the machines; they say it is low grain prices. And that goes on in many ways. Retailers are struggling with price competition from Amazon. They don't often name, well, we are not as efficient as the robots in Amazon distribution centers and so on. And so I think that really we have to look at this in a macroeconomic sense because its effects will not be small, and I encourage you to think about that.

Mrs. YELLEN. Thank you.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from Missouri, Mrs. Wagner, chairwoman of our Oversight and Investigations Subcommittee.

Mrs. WAGNER. Thank you, Mr. Chairman.

And Chair Yellen, our committee has been concerned for some time about confidential FOMC information being shared with favored constituents. In March, Vice Chair Fischer delivered the keynote for a Brookings Institution dinner and reportedly delivered remarks and took questions on interest rate policy. I say "reportedly" because the dinner was closed to the public and the press but open to Wall Street and other financial interests.

In addition, Vice Chair Fischer's prepared comments have not been made available, and the fact the speech took place, frankly, at all was not widely known. This keynote flies in the face of the FOMC's policy on external communications of Committee participants, which states that, and I am going to read this right out of the policy, "Committee participants will strive to ensure that their contacts with members of the public do not provide any profit-making person or organization with the prestige advantage over its competitors. They will consider this principle carefully and rigorously in scheduling meetings with anyone who might benefit financially from apparently exclusive contacts with Federal Reserve officials and in considering invitations to speak at meetings that are sponsored by profit-making organizations or that are closed to the public and the media.''

Chair Yellen, we all want transparency and accountability for our monetary policy so that it remains insulated from political and profit-making interests. The Vice Chair's speech does not help with that at all and in fact, flagrantly flies in the face of policy.

The speech occurred just days before another Fed official, Jeffrey Lacker, abruptly resigned as Richmond Fed President after admitting to playing a role in the 2012 FOMC leak, where market-sensitive details of the central bank's internal deliberations were leaked to a private consultant that then shared the details with clients who stood to net millions in profits by trading ahead of the release of the news. However, the true leaker still remains at large apparently as former President Lacker appears to have only incidentally confirmed insider information that Medley had already received. This is something that I, certainly as Chair of the Oversight and Investigations Subcommittee, will continue to look into. Chair Yellen, how could this speech have been allowed to happen, given everything that had occurred with the 2012 FOMC leak?

Mrs. YELLEN. Okay. So let me start by saying that the very beginning of our policy on FOMC external communications states the two-way communications between members of the Committee and members of the public are very important both to communicate with the public and also to gain information, and that these will occur in a variety of ways, including in some closed-door meetings.

So there is no requirement that FOMC members cannot meet in closed-door sessions. The Brookings Institution is not a for-profit institution. It is a nonprofit. And we have a clear set of guidelines governing what can and cannot happen in such—

Mrs. WAGNER. Will the remarks be released to the public?

Mrs. YELLEN. The clear rules are that no FOMC confidential information can be divulged ever, including in a closed-door setting, and that FOMC officials may not discuss even their own views on policy, except to the extent that they have already been presented in a public forum.

Mrs. WAGNER. So Wall Street—

Mrs. YELLEN. The Vice Chair's remarks did not pertain to monetary policy. They pertained to financial—

Mrs. WAGNER. Reclaiming my time, Chair Yellen, the difficulty with this is that we don't know that. And in the interest of transparency and accountability, perhaps it would be good to show the light of day on whatever his remarks were to Wall Street bankers that were invited to a speech at the Brookings Institution. And I have to say, Madam Chair, it is very clear that these should not be closed to the public or the media. So I am very concerned about this going forward, and I am also concerned about the resolution with the Board due to the internal governance that happened on the FOMC leak. So I would like to submit that in writing and get your information on that.

Thank you, Mr. Chairman. I am sorry to have gone over my time.

Mrs. YELLEN. I want to say that we have cooperated fully with our inspector general and law enforcement agencies, that they have had access to all information that is relevant to this matter and that they announced simultaneously with President Lacker.

Mrs. WAGNER. The Board must improve the standards and keep to its standard, Madam Chair. Thank you.

Chairman HENSARLING. The time of the gentlelady has expired.

The Chair now recognizes the gentleman from Missouri, Mr. Clay, ranking member of our Financial Institutions Subcommittee.

Mr. CLAY. Thank you, Mr. Chairman.

Thank you, Chair Yellen, for being here.

Perhaps we should replace some of the fantasy that we have heard today on the other side with the reality. I hear my colleagues over there say that, within 6 months of this new Administration, we have improved the economy, we have improved employment opportunities for Americans. I guess they are pointing to the Carrier deal in Indiana where they were promised over 1,000 jobs to stay in this country, and about 750, we hear, are moving to Mexico. But we will give the President credit for that deal.

And really I know that the reason why the economy has turned around is the sustained job growth of the previous Administration over more than 6 years.

So here's my question to you, Chair Yellen: In May, the overall unemployment rate of 4.3 percent hit a 16-year low. Although the unemployment rate rose one-tenth of a percent in June, this reflected the positive news that more workers who had dropped out of the labor force have returned to look for work. With the overall rate of employment now down at historically low levels, would you say that the economy has reached full employment, or do you believe that this headline rate masked weaknesses is in the labor market where additional progress must be made?

Mrs. YELLEN. Not all groups in the labor market are faring equally well, and we remain concerned about, particularly for African Americans and Hispanics, weaker job market outcomes, but monetary policy is a blunt tool.

As you point out, the unemployment rate and overall state of the labor market is strong with many job openings and opportunities for workers. The unemployment rate has even fallen slightly below levels that my colleagues would regard as sustainable in the longer run. We have seen a steady rate for several years now, a constant rate more or less of labor force participation, which, with an aging population tending to push it down, suggests that groups that have been sidelined are finding opportunities and entering the labor force and gaining employment. So that is a strong performance. And this has now been going on, as you said, for a number of years and has continued—is continued this year.

Mr. CLAY. And thank you for that response because progress doesn't happen in 6 months, especially when you have to recover from a devastating recession. And so for the other side to give credit to someone who is not even focused on our economy is ridiculous.

One more question: What in your view have been the key drivers of the job gains since your last testimony before this committee 6 months ago? Have job gains been driven by longer term trends from a growing economy, or have they largely resulted from new policies adopted in recent months?

Mrs. YELLEN. The global economy has recovered. It was a source of weakness earlier. That has been a source of support. And we have had ongoing job gains and increases in, for example, housing prices that are boosting the wealth and consumer sentiment of Americans, and that is driving consumption spending that is strong enough to create ongoing job gains that exceed what is needed for an expanding labor force. So the job market continues to strengthen, and unemployment continues to move down.

Mr. CLAY. And thank you for that response. I hope this is not your last visit to this committee, but I am sure it won't be the last time we visit.

Thank you, and I yield back.

Chairman HENSARLING. The gentleman yields back.

The Chair now recognizes the gentleman from Mr. Florida, Mr. Posey.

Mr. POSEY. Thank you, Mr. Chairman.

I hate to get into the cat fight or dog fight of who shot John and whose policies are doing what, and I heard the remark that the economic analysis cannot show any significant short-term results or something to that effect, and I would just like to remind the other side that I saw dramatic overnight change in the stock market from the election to the inauguration. And I think we will go on.

Chair Yellen, it's good to see you again. Since I arrived in Congress, the most cosponsored bipartisan significant piece of legislation has been Dr. Paul's original legislation to audit the Fed. We passed it. But it goes nowhere at the other end of the building. Are you afraid of getting that passed?

Mrs. YELLEN. I am strongly opposed to audit the Fed. What audit? The Fed is audited in every way that normal Americans would regard an audit. Our financial accounts and holdings are—

Mr. POSEY. It is not audited like all other agencies. You are aware, as well as I am, of the list of exemptions to the Fed.

Mrs. YELLEN. Audit the Fed removes exactly one exemption that the Federal Reserve enjoys, which is real-time policy reviews by the GAO of our monetary policy decisions, and that is the essence of Federal Reserve independence and trying to keep politics out of decisions that should be technical, professional, and nonpartisan.

Mr. POSEY. I would agree if I thought there was a lot of truth to that statement, but auditing something after the fact has nothing to do with influencing the decision, I wouldn't think. I would consider it a matter—an important matter, actually, of transparency, and I, for the life of me, cannot understand what the Fed fears.

Can you give me an example that would justify the lack of transparency?

Mrs. YELLEN. We don't have a lack of transparency.

Mr. POSEY. You do if you can't audit it. It is a lack of transparency. To most people I know, it is lack of transparency. To some people, it may not be, but I don't understand that. That is the reason I am questioning you about it.

Mrs. YELLEN. I regard the Federal Reserve as one of the most transparent central banks in the world.

Mr. POSEY. That is a statement. What do you fear about the audit? Give me a real-time example.

Mrs. YELLEN. I think the FOMC needs a space in which it can have honest conversations and deliberate in real time about the decisions that we make without having political influence brought to bear and second-guessing decisions that we have made and opining on them possibly with the idea of revisiting them.

Mr. POSEY. We can discuss things in public that are sensitive, talk about national security. The Supreme Court does the same thing. They don't worry about the transparency influencing them. Just give me an example. Give me an example of how transparency could hurt the Fed? Just give me one example how it could hurt the Fed being transparent.

Mrs. YELLEN. Because what you are talking about with the GAO are policy reviews—

Mr. POSEY. No, give me an example, not a general swipe of review. Just say: Take for example this. If somebody said this, it would be horrible; it would be the end of the world for the Fed. Give me an example like that.

Mrs. YELLEN. I would envision a situation where the GAO at the request of Members of Congress might come in and say, at our meeting a week ago, they have taken the transcripts and reviewed what we said; they believe that the decision we made was the wrong one at that particular meeting. And I would say that is an extreme interference and politicization of our ability to make independent monetary policy decisions.

Mr. POSEY. So you are telling me we shouldn't be transparent for the fear of being second-guessed or somebody criticizing you because they thought you were wrong. Do I get it?

Mrs. YELLEN. What we are talking about is political interference in decision-making by the Committee.

Mr. POSEY. I don't see that. If it is after the fact, I don't see the interference in decision-making.

Mrs. YELLEN. Well, I do, so I—

Mr. POSEY. Give me an example.

Mrs. YELLEN. I gave you an example.

Mr. POSEY. Give me one example why they shouldn't have that transparency.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Georgia, Mr. Scott.

Mr. SCOTT. Thank you very much, Mr. Chairman.

Chair Yellen, welcome. It's good to have you here again. Chair Yellen, I, first of all, want to thank you and the Federal Reserve. Under the leadership of our ranking member, Ms. Waters, and the ranking member of Judiciary, John Conyers, and myself and others, we were hopeful that, for the first time in history, American history, that the Federal Reserve would appoint and hire the very first African American ever to hold the position as a regional president of the Fed, and you all did that. And we want to say thank you so much. We deeply appreciate that. That means a lot, not just to the African-American community, but to all Americans. That is what this great country is about.

Now let me go to one other thing. Chair Yellen, you and I have had ongoings about, of course, the high unemployment rate of African Americans, and I always remember fondly when you referred to that as a blunt instrument. As I said, that is what M said to James Bond to describe him. In other words, he couldn't go through it. So you said that Congress had to come up with some legislation. We did that, House Resolutions 51 and 52, of which we sent a copy to you, which would tie the staggering unemployment rate of African-American young men in the inner city to apprenticeship training programs attached to rebuilding the crumbling infrastructure. That has been introduced, and, of course, each 5 years, we have to by law fund the 1890s, African-American colleges. So we put $95 million in the appropriations hopefully that we will be able to spread over for 5 years at $5 million for each of these universities over that period.

Now I have read your past reports that you have given and you have talked about housing. And we would like to move to that next, and in your past three reports, you made a point to dedicate full sections of the report to specific topics related to the disparity that the Federal Reserve is seeing in the data for the African-American community. So I want to call your attention specifically to those sections from the three most recent reports to Congress. The titles of these—and you referred to them as boxes, if you recall, boxes. That is what the Fed calls them. And one box was, have the gains of the economic expansion been widely shared? Box No. 3, homeownership by race, ethnicity. And box No. 3, does education determine who climbs the economic ladder? And in that discussion of those problems you highlighted—included socioeconomic differences between Whites and Blacks, poor credit scores due to income disparities, and continued discrimination. That lays it bare.

So, Chair Yellen, let me just ask you, of all of these factors in your boxes, which of these factors is most pressing and what recommendations on substantive solutions can we in Congress work on to help address the homeownership problem hurting African Americans, much as you suggested that we develop this legislation that is moving forward on the unemployment of African Americans?

Mrs. YELLEN. I don't want to try to give you detailed suggestions for what legislation you can put forward. Our job is to try to do the best we can to provide information and background that will be helpful to you as you decide what is appropriate. And I do believe this is squarely in the domain of Congress and the President, and we are trying to provide useful information.

Mr. SCOTT. Absolutely. And we will pursue that. I commend you for bringing that up, and I would love for you to stay on in your position as Chair of the Fed.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes—

Mr. SCOTT. If I have a chance to speak to Mr. Trump, I will mention that.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from New Jersey, Mr. MacArthur.

Mr. MACARTHUR. Thank you. Chair Yellen, welcome.

I want to thank you for your service to our country, and I appreciate you being here today. Your testimony has been helpful to me. I had two areas I wanted to explore. One is nonbank SIFIs. My State, New Jersey, in 2014 authorized by legislation our Department of Banking and Insurance to do group supervision of insurers that were involved in the international marketplace. And I know that FSOC, under Dodd-Frank, when it reevaluates SIFI designations annually is required to consult with State regulators, and I wanted to get a sense from you of whether—how you would view now a State insurance department doing regulatory work of a group insurer, does that impact, in your view, how FSOC might look at the SIFI designation of an insurer?

Mrs. YELLEN. This is a matter for FSOC to decide. We have met with State regulators in New Jersey, and I am aware of this development, which is a heartening one. I would say that the FSOC's focus in designation is the systemic risk that the failure of a given entity could pose to the broader financial system. To the best of my knowledge, most State regulators focus in supervision on protection of policyholders, which is, of course, a very important objective, but not on the systemic risk that the activities of a company could pose to the broader financial system. And so, in considering this matter, FSOC would, I think, have to take account of what the focus of that holding company supervision would be.

Mr. MACARTHUR. I appreciate that, although I would add as just somebody who spent a lifetime in insurance, I think State regulation has proven to be, when you regulate individual companies within a group, you create a safer company, and I think our system is better than the European system, which focuses on the group, not the company. But that is another matter.

The other area I wanted to explore with you was the labor participation rate. You have mentioned it twice today, and each time, you have said that our aging population is pushing it down. And I guess, on the one hand, that makes a certain amount of intuitive sense. We have a Baby Boomer bubble working its way through, but I did want to ask you about a few particulars with that. Do you use—does the Fed use the Bureau of Labor Statistics' data on labor participation?

Mrs. YELLEN. I believe that is the core data we have on—

Mr. MACARTHUR. That is the core data. So I have the Bureau of Labor Statistics' employment data on my iPad. I am looking at it. Unfortunately, I didn't do it ahead of time, so I can't put it on the screen. But when I look at the actual data, all people over 16 years old—so basically everyone who is of working age—that has gone—labor participation rate has gone from 66.6 percent in 1994 to 62.9 percent in 2014. So it is a 3.7 percentage point decline in labor participation. And you have suggested that is because people are getting older, and they are dropping out of the workforce. But that is not what this chart says. What it says is that 65 and older has actually increased from 12.4 percent in 1994 to 18.6 percent. That is a 6.2-percent increase in that 20-year period—let me just finish the question—for that group, and then for 55 and older, which is broader and includes those of normal retirement age, that number has gone up by 10 percentage points. The one that has gone down, the group that has gone down is the 25- to 50-year-old. They have declined from 83.4 percent participation to 80.9 percent participation. That group, the 25- to 54-year-old group peak earning years has declined by 2.5 percent; 2.5 percent times 324 million population is 8.1 million unemployed people in peak earning years. It doesn't seem to square with your assertion earlier twice.

Mrs. YELLEN. So, very quickly, it is true that people in the retirement years 65 and older are working more now than they used to, but the level of labor force participation of that group is dramatically lower than of prime age workers, and an increasing share of the population is now moving into those years with low labor force participation. So there is no conflict between the number that you cited and my statement that an aging labor force—

Mr. MACARTHUR. My time has expired.

Mrs. YELLEN. It is also true—

Chairman HENSARLING. The time of the gentleman has expired.

Mrs. YELLEN. —that participation of prime age workers has declined.

Chairman HENSARLING. The Chair now recognizes the gentleman from California, Mr. Sherman.

Mr. SHERMAN. Thank you, Madam Chair, for coming here.

Every few months I remind you that you have not yet used your authority to break up the too-big-to-fail institutions. And I will spend the next minute reminding you. They are too-big-to-fail. If the entity, just one entity, goes down, it could take our whole economy down with them. They are too-big-to-compete-against because economic studies say that they—that investors and the markets assume that they will be bailed out. They have seen that Congress will pass new legislation to bail out if that is thought necessary to save the economy, and that, therefore, they are able to get a cost of funds that may be as much as 80 basis points less than they would otherwise. They are too-big-to-jail, as former attorney generals have said they wouldn't criminally prosecute because it might take down the whole economy. If the same thing was done by a medium-sized bank, no economic problem, go ahead and prosecute.

And then, with the Wells Fargo debacle, we have a difference between Republicans and Democrats. Democrats tend to blame the management of Wells Fargo and say that that proves they were too big to manage, and Republicans tend to blame you, the regulators, which just proves that they were too-big-to-regulate. So too-big-to-fail, too-big-to-compete-against, too-big-to-jail, too-big-to-manage, too-big-to-regulate. When a protozoa gets too big, it is able to split into two healthy cells, and I would think that the geniuses on Wall Street would have at least the same level of intelligence as the average one-celled aquatic animal.

Every time you come here, you are attacked by those who criticize the low interest rates that we have had in our economy. Now with low interest rates, you get more economic growth, but you might also get more inflation.

Over the last 5 years, has rampant inflation been a disastrous difficulty for the American economy?

Mrs. YELLEN. Inflation has been running under our 2 percent objective for the last 5 years and continues to do so.

Mr. SHERMAN. And I won't even ask you this question, because it is so obvious. Has economic growth been too robust? Go ahead.

Mrs. YELLEN. It has not been particularly robust, but it has been sufficiently robust to create a lot of jobs and drive down the unemployment rate.

Mr. SHERMAN. But every day, every time you come here, you are told that the interest rates are too low, but you are also criticized because the economic growth has not been robust enough.

Now, behind you, at the request of the Majority, is the National Debt Clock. The Majority always comes and tells you that you should shrink your balance sheet, that you should sell off your assets. Of course, you in effect are lending money for longer terms and borrowing money for shorter terms or just printing it, one way or the other, and you create a tremendous profit for the Federal Government by having a big balance sheet. So people want you to have a small balance sheet when your big balance sheet is creating a lot of profits for the Federal Government.

Have any of the advocates for a smaller balance sheet proposed to you the taxes they want to increase in order to replace the profits that you are earning on the balance sheet that they are telling you to shrink?

Mrs. YELLEN. It is certainly true that our large balance sheet has resulted in very substantial transfers to the Treasury and to the Federal budget. Let me say our objective is not to make a profit and to maximize those transfers, but rather to do what is right in the pursuit of our objectives, but it is true.

Mr. SHERMAN. I would say that the millions of Americans who want us to run the Federal Government more like a business would say that perhaps profit should be thought of as an important objective. And I will take your answer as that you have not heard any proponent of a smaller balance sheet put forward a tax increase proposal designed to replace those revenues or to keep that clock behind you from turning more quickly.

Finally, we want businesses to do things that require longer-term capital. You tend to focus on short-term interest rates. What has your big balance sheet done to decrease the gap between short- and long-term interest rates, the yield curve?

Mrs. YELLEN. We purchase those assets to drive down long-term interest rates relative to short or to flatten the yield curve and lower longer-term borrowing rates.

Mr. SHERMAN. And so the proposals are to make it more difficult to borrow money long term.

Mrs. YELLEN. That is correct.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Tennessee, Mr. Kustoff.

Mr. KUSTOFF. Thank you, Mr. Chairman.

Thank you, Madam Chair, for appearing this morning.

In the next hour or so when this hearing ends, if you were to receive a call from the President telling you that he intended to nominate you for another term, would you accept?

Mrs. YELLEN. It is something that hasn't been an issue so far. It has not been something that has come up. But it is certainly something that I would discuss with the President, obviously.

Mr. KUSTOFF. Thank you.

And yesterday, when I asked you about comments that Jamie Dimon made as it relates to assets coming off your books, you have stated here today and you have stated in previous reports that the Fed does intend to reduce its asset, the balance sheet, assets off the balance sheet.

I would like to ask you first, before I ask you about Mr. Dimon, if you could address the timing of when those assets will come off the books, the amounts, and procedurally, how that will be done?

Mrs. YELLEN. Yes. We have tried to set out a relatively complete plan. Our assets currently total close to $4.5 trillion, consisting of roughly $2.5 trillion of Treasuries and $1.7 trillion of mortgage-backed securities.

We have said that we intend to shrink our balance sheet and particularly the outstanding quantity of reserves in the banking system, which are now around $2.2 trillion, in a gradual and predictable way. And we have said that what we intend to do is, once we begin this, as we receive principal payments on Treasuries and the agency securities and our portfolio, currently, we are reinvesting all of those principal payments, we will begin to diminish our reinvestments and only reinvest to the extent that our monthly receipt of principal exceeds a cap.

The cap will initially start at low levels, $6 billion a month for Treasuries and $4 billion a month for mortgage-backed securities, and over the space of a year will ramp up to $20 billion for mortgage-backed securities and $30 billion for Treasuries. So after a year of this process running, the caps will remain in place but bind only infrequently when there are unusually large redemptions of principal that take place.

And we have not decided yet on what our longer-run monetary policy framework will be and what quantity of reserves that will entail our supplying to the banking system. We expect it to be substantially larger than pre-crisis but substantially less than we have now. And I would say this process will play out probably to around 2022 when our balance sheet would probably somewhere in that range shrink to normal levels.

Now, since the crisis, currency has more than doubled in quantity from about $700 billion to $1.5 trillion now. So our balance sheet will end up substantially larger than it was before the crisis but appreciably lower than it is now. And then over time when this process is complete, if currency and circulation continues to grow, our balance sheet would likely grow in line with the overall economy.

Mr. KUSTOFF. I think you probably saw the comments yesterday from Jamie Dimon, chairman of JPMorgan Chase, about his concerns about assets being moved off the balance sheet. Do you share those concerns?

Mrs. YELLEN. We have tried to be very methodical about informing the public and the markets about how we are going to do this. We have provided essentially complete information. We have not heard significant concerns or seen a significant market reaction.

So we have indicated we expect to begin this if the economy stays on track this year. I expect and certainly hope that this will go smoothly and it will be a gradual and orderly process, one that we will not be revisiting on a regular basis. It is something that we will run. It will be understood and play out over time.

So, obviously, we will watch what the market impacts of this are when we put it into effect, but I expect this to play out smoothly. It is certainly my hope and expectation.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Michigan, Mr. Kildee, the vice ranking member of the committee.

Mr. KILDEE. Thank you, Mr. Chairman.

And thank you, Chair Yellen. It is good to see you. Glad to have you back.

As you may recall, and I am sure some committee members will recall from previous discussions, I sort of consistently raise this issue of older industrial cities, the condition of older communities, a subset of American cities that are continuing to struggle.

In fact, I am launching an effort actually beginning today with a discussion at 2:00, entitled, "The Future of America's Cities and Towns," specifically to raise more attention around this question.

And we have talked in the past about the role that regional banks might play in working with these particular cities that face both economic challenges, but specifically the cities that face fiscal stress.

The thing that I am concerned about is that when we look at aggregate data, even with relatively slow growth in the economy, the assumption is that even a slowly rising tide raises all boats. Well, it does not, and we know that.

And so the question I have that I would like you to comment on is what policies might the Fed engage in? And to the extent that your mandate regarding employment is also affected by policy that we make, what are the sorts of initiatives that you think should be engaged, both by the Fed and by Congress, to help deal with this real disparity which continues to grow?

And I will just underscore this point by saying, there is a whole set of American cities that are really struggling, both in terms of the growing unemployment, increased poverty, lack of opportunity, low educational attainment, aging infrastructure, fiscal stress in these cities where we are going to see bankruptcies, or at least insolvency. If the States won't allow those communities to go into bankruptcy, they are still insolvent.

These are communities that have high concentrations of minority populations, and you note in your testimony the disparity that those particular communities face. And this is not some sort of accident where just by bad luck a bunch of communities are struggling. It is a result of policy.

And I wonder if you just might comment on what you think the Fed can do and what Congress can do to help achieve not only growth in terms of employment and wages, but greater equity in terms of how those areas of growth might be shared.

Mrs. YELLEN. So the Federal Reserve, and particularly the Reserve Banks around the country, play an important role in doing research on community development and try to understand and publicize what kinds of strategies seem to work. Of course, we play a role in the Community Reinvestment Act, which financial institutions are looking to ways—for effective ways of promoting development.

A number of Reserve Banks have looked specifically at older industrial cities and tried to study, and we have volumes that have been published on this. The Boston Fed in particular has been very active in trying to understand what strategies have been effective in older industrial cities in regenerating activity in dealing with these problems.

And of course they are complex, but there are workforce development programs and collaborations between governments, local governments, State governments, nonprofits, businesses, that have been singled out as ones that appear to be promising. But of course these are very difficult issues, and Congress and policymakers as well as the Fed may have a role. Ours is mainly research and trying to disseminate findings that we have.

Mr. KILDEE. I appreciate that. And I have in my past work worked with the Philadelphia Fed, and Cleveland, on these issues.

I wonder if you might just in the final 2 seconds that we have comment on policy that Congress might enact, basically around budgetary policies that we have in place. I am really concerned that is an area where we may undermine not only your mandate but also our own work, in the 1 second remaining.

Mrs. YELLEN. I am not going to give you detailed advice on fiscal policy. I think focusing on policies that promote productivity growth and stronger economic growth should be near the top of your list.

Mr. KILDEE. Thank you, and I appreciate you coming back again.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from New York, Ms. Tenney.

Ms. TENNEY. Thank you, Mr. Chairman.

And thank you, Chair Yellen, for being here today, and also for your service to our country.

I want to touch on exactly the same issues that my colleague just touched on, and it sounds like our districts are very similar. I come from upstate New York, a very highly agricultural area, but a place that has seen better days in terms of our economy. We once had many, many community banks. And I might quote a very interesting comment that was made by President Trump in his inaugural address in describing our manufacturing landscape. And he described it as, "rusted-out factories scattered like tombstones across the landscape."

And you can look at our community banks much the same way. You can go to just about any corner in any suburban or small city area in my district and find community banks closed and overgrown with grass and not operating and empty where they once were providing great resource to our community, our small-business community.

Fifty percent of the small-business loans are made by community banks, 77 percent of agricultural loans are made by small community banks and credit unions in our community, and agriculture is still the number one industry in New York State, believe it or not.

And what I see, and very similar, I think this mirrors what has been going on in the business community as well as the banking community, as you provided in your prior comments to my predecessor speaker, that you think that a lot of government programs can help this and taxpayer money may be spent for work revitalization, but I am suggesting possibly the free market, since in New York State we spend 4 times more using taxpayer money in so-called "cronyism" on producing jobs and have the worst job production record in the Nation, the highest out-migration of jobs and the highest out-migration of people because of our regulatory burden.

And I thank you for indicating earlier that you do think that there are some ways that we can reduce regulations on some of these banks, especially the smaller ones who can't compete because of their compliance requirements. We now have the growing cybersecurity issue, where that is becoming very costly and burdensome. Obviously, lending to mortgages and to personal loans are very difficult.

You indicated earlier that you would support the Treasury's release that certain regulatory relief is in order. Could you tell me a couple of those recommendations that you would support in reducing regulations to help our small community banks and credit unions?

Mrs. YELLEN. I am very supportive of trying to reduce the burdens on community banks. We have suggested that there are things that Congress could do to help reduce burdens, for example, Volcker Rule and incentive compensation.

Ms. TENNEY. Are you saying you would eliminate the Volcker Rule for small community banks?

Mrs. YELLEN. I wouldn't apply it to community banks.

Ms. TENNEY. And where would you make that cutoff? Would it be something you would be interested in using overall eliminating the Volcker Rule or just—where would you make that arbitrary decision on what makes a small bank?

Mrs. YELLEN. We could discuss that. I don't have—

Ms. TENNEY. So you don't have an idea in mind where we could actually do that? I would love to know. Honestly, I am asking your—

Mrs. YELLEN. I would prefer to get back to you with a suggestion on that.

Ms. TENNEY. Okay. So we don't have a specific cutoff?

Mrs. YELLEN. But I think there is a lot that the banking regulators can do on their own. We have finished an EGRPRA review. The banking regulators are committed to addressing concerns of community banks about the complexity of capital regulations to come out with a simplified capital regime. We have recently cut reporting requirements for community banks. We are trying to extend exam cycles and to tailor the work that we do so more of it is done offsite in ways that are less burdensome to community banks and to risk focus our supervision so that we are focusing in our exams on the areas that are really of greatest risk. So we have a long list of suggestions coming out of the EGRPRA review that we will be working on.

Ms. TENNEY. Could you tell me what—so you indicated that there were some—earlier, you testified that these are some of the ones that you would support. Which ones wouldn't you support that are recommended by Treasury, as you indicated?

Mrs. YELLEN. I don't have that list before me. Let me say in general that is an area of the report that we are quite supportive of.

Ms. TENNEY. But definitely the Volcker Rule, at some point you would like to eliminate that especially regarding community banks?

Mrs. YELLEN. Yes.

Ms. TENNEY. Can you give me an estimate about where the capitalization requirement would be eliminated?

Mrs. YELLEN. What we would try to do is simplify requirements for things like commercial real estate, high volatility commercial real estate that banks have—community banks have found very complex or tax-deferred assets or whether capital instruments that have resulted in complexity.

Chairman HENSARLING. The time of the gentlelady has expired.

The Chair now recognizes the gentlelady from Ohio, Mrs. Beatty.

Mrs. BEATTY. Thank you, Mr. Chairman and Ranking Member Waters.

And thank you, Chair Yellen. Let me just first take a point of privilege to thank you for all of your work and tell you what an honor it is for me to have been in Congress at the time that I could sit here and ask questions of you.

And secondly, you will hear throughout all of our hearings colleagues oftentimes referencing that letters were written and 30 days have gone by, or months, or they did not receive an answer.

I want, Mr. Chairman and Ranking Member Waters, to state for the record that every single letter I addressed to you, I got a response. And not only did I get a response, I got a note or something attached with it from a staff person, and one I believe was actually your thanks.

So I think it is important because so often we criticize those. And I support colleagues on either side when someone does not respond to us. So I wanted to say thank you.

I am going to be consistent, but I am going to use some words I had not intended to use, but after my colleague from New York, Congresswoman Tenney, used the words, "finding common ground." I want to thank her for that, and I am going to start with common ground.

I think it is important when you represent a subset or you have a background, which we hear from real estate to small business to legal to housing or bankers, that you should use that expertise. Well, what I have is something that is oftentimes not included in the subset. While, yes, I am a small-business owner, I understand finance, I have been on a bank board, what is important to me is when we have inequalities when we are talking about economic development and monetary growth and we don't count ethnicity and race because it is a subset.

And while I appreciate your comments on page 1 of your testimony when you talk about the jobless rates have decreased, but because we know there is still so much disparity when we get to unemployment with people who look like me. So I have to be that voice for Black people and for minorities who get caught in the gap.

So with that, I am very afraid, because I know when we look at the economy and growth, if 22 million people are going to lose their healthcare, if we are going to cut programs where people then will have to or won't have the money to pay for them, I am nervous.

Now, with that said, I serve on the Financial and Economic Literacy Caucus. It is a Democrat and Republican. And as we are speaking now, I am being appointed to the Congressional Black Caucus Economic Development and Wealth Creation task force as co-chair.

You have stated that income equality is a long-term risk to our economy. We cannot talk about income equality without looking at the disparities and the discrepancies in household wealth among African Americans and minorities.

So I would like to say that recessions like the one we have just had—and there is a chart on the board, and I think it speaks for itself—that led to African Americans losing 52 percent of their wealth while White households only lost about 16 percent of their wealth, I am concerned that rising income equality will further exacerbate the problems for minorities with historically lower household wealth and higher unemployment.

Can you explain to this committee why income inequality is a long-term threat to the United States economy and who has the power to help us fix this?

Mrs. YELLEN. I am very concerned about inequality in income and wealth. I think Americans need to feel that this system, our economic system, is one where rewards come to those who work hard and play by the rules. And when some groups do disproportionately well and others seem to be lagging behind, as has been the case, there is a sense of its being a very unfair system.

Worse, to the extent that resources are important in assuring intergenerational mobility, that parents want to make sure that their children have access to the opportunities and ability to gain education—

Mrs. BEATTY. Thank you. I going to interrupt you to yield my time back on opportunities. Thank you, because we introduced the Beatty rule after the Rooney rule, and now we have a Black man for the first time, Chairman Bostic out of Atlanta, who is on the National Federal Reserve Board.

Thank you, and I yield back.

Chairman HENSARLING. The time of the gentlelady has expired.

The Chair now recognizes the gentleman from Indiana, Mr. Hollingsworth.

Mr. HOLLINGSWORTH. It is time to take a deep breath. You have reached the bottom of the rank on our side of the aisle, a mere private and freshman.

So I wanted to touch on something that my colleague Ms. Tenney had talked about in the Treasury report and kind of better understand some of those recommendations that you might agree with and disagree with as well.

I went through the report and kind of pulled out some of the ones that I think are most pertinent to your role in the Federal Reserve generally, either from a regulatory standpoint or with regard to monetary policy, and just thought I would ask very specifically, kind of agree, disagree. And I know there may be some follow-up after that, but you have to remember, I got probably a C-minus and probably deserved worse in economics, so mainly focus on the agree and disagree.

Do you agree or disagree that there should be expanded treatment of certain qualifying instruments as HQLA, including high-grade municipal bonds as level 2B liquid assets, and improvements to the degree of conservatism and cash flow assumptions incorporated into the LCR to more fully reflect banks' historical experience with calculation methodologies? That is a long-winded one. Take a deep breath.

Mrs. YELLEN. So let me see. On the first part of it, I think the Fed has gone further than the other regulators in including the more liquid municipal securities as level 2B assets, and so we are supportive of that.

Mr. HOLLINGSWORTH. Marvelous.

Second one, do you agree or disagree that U.S. rules implementing international standards should be revisited, including the G-SIB risk-based surcharge, including the short-term wholesale funding component?

Mrs. YELLEN. We recently finalized that rule, and I participated in that review and I regard that as appropriate. And I think the G-SIB surcharges are at a level that I think is justifiable given the—

Mr. HOLLINGSWORTH. What about the mandatory minimum debt ratio, including the Fed's TLAC minimum debt rule?

Mrs. YELLEN. I believe that is important as well to ensure that systemically important firms can be resolved.

Mr. HOLLINGSWORTH. Disagree with revisiting that.

And the calibration of the eSLR for G-SIBS?

Mrs. YELLEN. We discussed that earlier in connection with custody banks, and it is something I think we should look at. It may be having an unintended consequence.

Mr. HOLLINGSWORTH. So that we might agree with.

Do you agree or disagree with the efforts to finalize remaining elements of the international reforms of the Basel Committee, including establishing a global risk-based capital for it to promote a more level playing field for U.S. firms competing internationally?

Mrs. YELLEN. I would like to see Basel III finalized. Our banking organizations are operating with very high capital standards.

Mr. HOLLINGSWORTH. Correct.

Mrs. YELLEN. And this is mainly a matter of ensuring that other countries put into place appropriate capital regulation so that we have a level playing field. So, yes, I would like to see that happen.

Mr. HOLLINGSWORTH. Perfect. So agree with that.

In the final implementation-slash-finalization of the Basel III standard, would you exempt community banks from this? Would you exempt them from the risk-based capital regime that is promoted by Basel III?

Mrs. YELLEN. I am supportive of developing a simplified capital regime.

Mr. HOLLINGSWORTH. For community banks specifically?

Mrs. YELLEN. But to the extent that community banks were affected by Basel III, I am supportive of that.

Mr. HOLLINGSWORTH. Okay. Would you agree or disagree with raising the asset threshold of the Fed small bank holding company and savings and loan holding company policy to $2 billion from the current $1 billion?

Mrs. YELLEN. I think that is something we could look at.

Mr. HOLLINGSWORTH. Great.

And then the last one of these that I had was, do you agree or disagree that the Fed should carefully consider the implications on U.S. credit intermediation and systemic risk from implementation in the United States of a revised standardized approach to credit risk under Basel III capital framework?

Mrs. YELLEN. That was a mouthful.

Mr. HOLLINGSWORTH. Indeed.

Mrs. YELLEN. Excuse me?

Mr. HOLLINGSWORTH. Indeed, yes.

Mrs. YELLEN. I need to get back to you on that.

Mr. HOLLINGSWORTH. Okay. Thank you so much. I really appreciate you taking some time and coming to see us again. I really enjoyed your first testimony and this one as well.

Mrs. YELLEN. Thank you.

Mr. HOLLINGSWORTH. With that, I yield back, Mr. Chairman.

Chairman HENSARLING. The gentleman yields back.

The Chair now recognizes the gentleman from Washington, Mr. Heck.

Mr. HECK. Thank you, Mr. Chairman and Ranking Member Waters.

Chair Yellen, a couple of years ago at the Humphrey-Hawkins hearing I asked you, when does America get a raise? I asserted America deserves a raise, fueled in part on my behalf, because we have been through 30 years of fairly stagnant wage growth with the exception of some warmth, as it were, in the late 1990s.

I respect you because of your prowess as an economist. I admire you because of what I perceive to be your commitment to some values, including a concern for how the Fed's policies actually impact Americans, and that includes in this area of wage growth.

I believed it 2 years ago, I believe it now, 2.5 percent nominal growth, while better than a few years ago, does not render Americans feeling as though they are getting ahead, let alone staying even.

So given your commitment or my perception of your commitment to the average American, if such a thing exists, I read with great interest in the Monetary Policy Report the table on page 42, which essentially indicates that you project a definition of full employment over the long term of between 4.5 and 4.8 percent if you get monetary policy right, 4.5 to 4.8 percent, and yet, an indication that 2 years hence, the unemployment rate will be 3.8 to 4.5 percent.

It was a little hard for me to read that as other than your trying to or willing to let the economy run a little warm, presumably because maybe we can get wage growth above 2.5 percent and maybe closer to historic recovery rates of 4.0 percent.

Mrs. YELLEN. Inflation is running over the last 12 months at 1.4 percent below our 2 percent objective. And we have had 5 years or more of inflation running under our 2 percent objective. That is a commitment that we have, and it is a symmetric objective. And I think allowing the labor market, allowing unemployment to decline to the kinds of levels that you cited looks to be consistent with achieving our inflation objective.

Mr. HECK. And would yield higher wage growth than 2.5 percent, you would expect?

Mrs. YELLEN. I think wage growth seems somewhat low given our 2 percent objective, but it is very important to remember that one of the things that is holding down wage growth in real terms is very low productivity growth over the last—

Mr. HECK. I don't want to go down that rabbit hole. We did that last time.

Mrs. YELLEN. Without that changing, that really limits the long run prospects for workers.

Mr. HECK. I get that. And I get the controversy surrounding our measure of productivity of late. The fact remains, America needs a pay raise.

I take a fairly straightforward view of this. It seems to me—the economy—if we fall into a recession, the Fed cuts interest rates, and that increases availability and demand for loans, for the purchase of homes, for the purchase of automobiles, which has a stimulative effect on the economy.

It didn't happen this time with respect to housing, necessarily. It didn't respond. It did in autos, in fact, fairly robust until recently. And now auto sales are going down. There are layoffs, literally, in the industry.

You have described the monetary policy approach you are taking as still accommodative or stimulative, but that is not occurring in autos, especially given what I said earlier about I genuinely believe you care about how average Americans are impacted.

Homes and autos are the two biggest purchases that most Americans ever make. It didn't work at all through the recession in homes, we are stuck back at 1994 construction levels, and it is now not working on autos. Are you concerned?

Mrs. YELLEN. Mortgage rates are a little bit off their lows, although they are down from last year.

Look, I think you have to look at the bottom line, which is this year we have had 180,000 jobs created a month, only slightly lower than last year, 190,000 or so. The unemployment rate continues to decline. The labor market continues to strengthen.

And that means that even if auto sales are off their highs, that we have strong enough demand through consumer spending, a recovering global economy, a pickup in spending on plant and equipment, that it is supporting continued job creation at rates greater than the labor force growth.

Mr. HECK. Thank you.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Oklahoma, Mr. Lucas.

Mr. LUCAS. Thank you, Mr. Chairman.

Chair Yellen, before asking you anything, I would like to express concerns about the treatment of centrally cleared customer margin under the supplemental leverage ratio. I am concerned, as others are, that including this margin in the denominator of the ratio is artificially reducing the number of clearing options available to customers.

As you may be aware, lots of end users in my district use clearinghouses to hedge against risk in both agriculture and energy markets. But I am encouraged by the recent Treasury report on rate reform suggesting that this margin no longer should be a part of the ratio calculation.

In addition, your colleague, Governor Powell, told the Senate recently that the Fed is reviewing the leverage ratio. And I would agree with him that fixing this is critical for the health of the markets, and I look forward to the outcome of this review.

Madam Chair, I would like to discuss the 2013 leveraged lending guidance. In my district, the energy sector is one of the largest employers. As you and everyone else is aware, the energy industry is going through a bit of a tough time these days. And now for the purposes of leveraged lending guidance, the recent energy downturn means many, if not most, energy companies are qualified as distressed industries, meaning the guidance limits the ability of those companies to get credit and the loans they need to stay in operation and to employ my constituents.

The guidance also concerns me a bit because of the manner in which it was rolled out. The guidance in 2013 and in a series of FAQs in 2014—that is not exactly the most clear process—has forced institutions to review every loan they made to ensure compliance. The Administration also appears to share my concerns, recommending in their recent Treasury report that the guidance be revisited.

Chair Yellen, have you considered retracting the guidance? And along with that thought, also have you met with any industries that are considered distressed to hear about their difficulties in obtaining credit?

Mrs. YELLEN. We have put in place the leverage lending guidance I think for a very good reason, which is we were concerned about underwriting practices for those kinds of loans and want to make sure that lending is safe and sound.

We had shared national credit exams that resulted in disturbing findings about the quality of underwriting of those loans, and I think it was appropriate to put such guidance in place.

If they are having unintended consequences, I will discuss with my colleagues looking at that, but believe it was important to have put that in place.

Mr. LUCAS. I very much appreciate that, because the energy sector is not just important to the Third District of Oklahoma, but it is important to the entire national economy. And with the technological advances they have adopted where we have now gone from in many regions of the country no longer being importers of, for instance, crude oil and natural gas, but exporters, the effect that they are having on our overall balance of payments, the potential opportunities there are just incredible.

And these guidances from 2013 and the FAQs from 2014 seem to be causing some real stress out there as they are being interpreted, and your commitment to look at those to try and make sure we don't create unintended consequences—because the number of barrels of oil are still in the ground in those proven reserves, the number of BCF of natural gas is still there, the technologies that have been enhanced and reduce the cost of our production are still in place. It is just we have to work our way through a tough time, and bearing that in mind, by the Fed and yourself, I very much appreciate that, Chair Yellen.

And with that, Mr. Chairman, I yield back.

Chairman HENSARLING. The gentleman yields back.

The Chair will now recognize the gentleman from Maryland, Mr. Delaney.

Mr. DELANEY. Thank you, Mr. Chairman.

And thank you, Chair Yellen, for your incomparable leadership at the Federal Reserve. It is always nice to have you here. And we are getting towards the end, so I thought I would ask a question and kind of tap into your knowledge as a macro economist and think about some of the long-term trends of employment.

There has been a lot of talk recently about what will happen to the future of work and jobs based on technological innovation, automation, machine learning, artificial intelligence, whatever the category may be. And while, historically, innovation has created more jobs than it has displaced, it generally does come with a lot of fear as to what will happen to the labor market. And maybe that is because we can see the jobs that will be displaced, but we don't really have a good ability to really imagine the jobs that will be created by this innovation.

And this has caused many people to start talking about things like universal basic income, where they are kind of talking about how there will be no jobs in the future and robots and machine learning will displace all the jobs and we are going to have to figure out ways of supporting people.

To me, that is premature for obvious reasons. Unemployment is very low. There are a lot of jobs in society that are being done that no one gets paid for, and we should certainly try to figure out how to pay those people for what they are doing before we start paying people to do nothing. And again, historically, more jobs have been created.

But what are your thoughts on this topic as someone who spends a lot of time not only thinking about the macro, but obviously someone who cares deeply about employment and its importance to people's dignity and ability to raise their family and earn a living? So how is this going to play out, in your opinion?

Mrs. YELLEN. I don't have a crystal ball and these are very difficult issues.

Mr. DELANEY. None of us do. I know. But you are very smart and you look at a lot of data, so—

Mrs. YELLEN. I know technological change has been a tremendously important source of growth and improvement in living standards in the United States and around the world, and so it is something that we should want to see and foster. But it is disruptive and it can cause considerable harm to groups whose livelihood is disrupted by technological change that renders their skills less valuable or not at all valuable in the market.

And I would expect that the kinds of technological changes that you describe will continue to change the nature of work, the kinds of jobs that will be available, and the skills that will be needed to fill those jobs. And to my mind, a very important focus for all of us should be on—

Mr. DELANEY. So what should be the three things we should do to prepare? Because I agree with you, it is going to change the nature of work, it will create jobs, it will displace jobs, and people need different skills. What would the two or three things you would do to best prepare the future to be able to succeed now?

Mrs. YELLEN. To my mind, education and training are absolutely central to the ability of workers to fill the new kinds of jobs that will be available and to have the skills.

When I talk to businesses that are adopting new technologies, they tell me it is also creating new kinds of jobs, that they find that younger workers, even those with less education, have nevertheless been exposed to the kind of training that will enable them to fill the kinds of technical jobs that have been created with appropriate training. But it is a tremendous challenge for older workers who don't have that kind of training to make adjustments.

I would look both to ensure that we have appropriate training, education, apprenticeship programs, and other things for younger people, and also to see what we can do to relieve the burdens on older workers who are displaced.

Mr. DELANEY. So if I could kind of summarize what I think I just heard you say, you are not necessarily bearish on the future of jobs and work?

Mrs. YELLEN. Correct.

Mr. DELANEY. You agree that new jobs will get created to offset displaced, probably a net positive?

Mrs. YELLEN. I believe so.

Mr. DELANEY. But you are worried that we are not doing enough or you think we should do more in reforming education, training, apprenticeship programs, et cetera, because the challenges are going to be very significant.

Mrs. YELLEN. That is certainly a key focus for me.

Mr. DELANEY. Great. Thank you again, Chair Yellen.

Mrs. YELLEN. Thank you.

Chairman HENSARLING. The gentleman yields back.

The Chair now recognizes the gentleman from Illinois, Mr. Hultgren.

Mr. HULTGREN. Thank you, Mr. Chairman.

And thank you, Chair Yellen, for being here.

Chair Yellen, the financial sector's commitment to cybersecurity is perhaps better than any other. Unfortunately, many have recently raised concerns that while well intentioned, many regulators are starting to require duplicative, conflicting, and improperly calibrated requirements. We want to keep everyone, regulators and industry, moving in the same direction, and that is to achieve stronger cybersecurity.

Do you believe the efforts by the Treasury Department to coordinate regulatory harmonization of rules and requirements with respect to cybersecurity, do you support those efforts?

Mrs. YELLEN. I am supportive of those efforts. And we have certainly heard in our own outreach on cybersecurity the importance of having uniform standards so that firms are not facing different regulatory demands that may be technologically conflicting, and I think that is an important goal.

Mr. HULTGREN. You maybe have answered this enough, but just to dig in a little bit more specifically, in its recently released report in response to the President's Executive Order on financial regulation, the Treasury Department called for Federal banking regulators to harmonize cybersecurity regulations using a common lexicon. I wondered if the Federal Reserve is committed to achieving this goal?

Mrs. YELLEN. Yes.

Mr. HULTGREN. Great.

During the last appearance that you had before this committee, I expressed my concern about the treatment of centrally cleared customer margin under the supplemental leverage ratio. The regulatory treatment of customer margin diminishes clearing options for customers while forcing them to pay more for these services.

I applaud the Treasury Department's recommendation in its core principles report to grant an offset for a centrally cleared customer margin under the leveraged ratio. An offset would have a relatively insignificant impact on bank capital while driving down costs for clearing services.

I understand British regulators have already granted an offset for client margins in the U.K., and the EU is expected to offer European banks an offset as well for the sake of clearing customers in the United States. I hope the Federal Reserve will follow suit and work with its fellow regulators to adopt an offset for U.S. firms.

Mrs. YELLEN. I think the supplementary leverage ratio may be having an unintended consequences, and it is something that we should look at very carefully, and I am committed to doing that.

Mr. HULTGREN. Thank you.

Chair Yellen, on a similar note, on June 22nd, Federal Reserve Governor Powell testified before the Senate Banking Committee that, "We believe that the leverage ratio is an important backstop to the risk-based capital framework, but that it is important to get the relative calibration of the leverage ratio and the risk-based capital requirements right. Doing so is critical to mitigating any perverse incentives and preventing distortions in money markets and other safe asset markets. Changes along these lines could also address concerns of custody banks that their business model is disproportionately affected by the leverage ratio."

And on April 4th, former Governor Tarullo gave a speech where he stated, "As to the impact of the 2 percent enhanced supplementary leverage ratio, our experience leads me to believe that it may be worth changing to account for the quite different business operations of the G-SIBS, particularly those in custody business."

He further said, "In practical terms, the asymmetry is most significant for the two banks that are dominantly custodial and transactional in nature rather than lending and trading firms. These banks have had the lowest risk-based surcharges of the eight G-SIBS, currently 1.5 percent, but their leverage surcharge is 2 percent. This is especially problematic for their operations, since they prudently reinvest customer deposits into safe and liquid assets."

Furthermore, the Treasury Department's June 2017 report states, "Exceptions from the denominator of total exposure should include cash on deposit with central banks."

I wonder, do you agree with this assessment, and when could we expect the Fed to take action to address these concerns?

Mrs. YELLEN. I agree with the comments of my colleagues that the supplementary leverage ratio may be creating this set of problems that you addressed. You discussed that there are different ways of dealing with it. I am committed to looking at it and trying to recalibrate it so that it avoids these adverse consequences.

Mr. HULTGREN. I know it is going to be difficult to say, but do you expect that the Fed will take action before January 2018 when the new enhanced supplementary leverage ratio goes into effect?

Mrs. YELLEN. Let me get back to you on the timetable.

Mr. HULTGREN. Great. Thanks again, Chair Yellen. I appreciate your work, and I appreciate you being here today.

I yield back.

Chairman HENSARLING. The gentleman yields back.

The Chair wishes to advise all Members that the Chair intends to release the witness at 1:00, and anticipates clearing four more Members from the queue.

The Chair now recognizes the gentleman from Texas, Mr. Green.

Mr. GREEN. Thank you, Mr. Chairman. I thank the ranking member as well.

And, Chair Yellen, I thank you for appearing today.

I am looking at currently an article from The Washington Post dated May 17, 2017. It is styled, "The Nation's Biggest Banks Have a Common Gripe. They Have Too Much Money." I would just like to read some of the relevant portions.

Banks are sitting on a $131 billion in excess capital, according to a March research report by Goldman Sachs. If capital requirements are lowered, banks can return the money to shareholders in the form of dividends, boosting the payouts perhaps by 45 percent in 2018. This is according to the Goldman Sachs report.

Hampering the industry's arguments has been record profits. Despite higher capital requirements, the country's banking industry reported more than $171 billion in profit last year, and the volume of bank loans has increased significantly since the financial crisis.

So the question I have, Madam Chair, is this: Should we change the capital requirements simply because we can have the opportunity to return more dividends, boost more payouts? Is that a good reason to change capital requirements?

Mrs. YELLEN. I strongly believe that we should have strong capital requirements for the safety and soundness of the banking system and the financial sector more broadly.

I am comfortable with the level of risk-based capital requirements that are in place at this point, and especially the most systemic firms should have the largest capital buffers.

So once those capital buffers are in place, the Federal Reserve has no objection to firms distributing profits as dividends to shareholders or in the form of share repurchases.

This year in our stress tests we approved the plans of almost all of the firms involved to return capital of their shareholders, but that is because we are comfortable that they have built the capital buffers that are necessary for a safe and sound banking system and comfortable that they can go on, even under severe stress, meeting the credit needs of the U.S. economy.

Mr. GREEN. Thank you.

Let me move to another topic, because this is quite important and I don't want to neglect it.

Thank you for your response to the letter that I and some 36 colleagues sent you concerning the African Americans, Latinos, and the fact that the unemployment rate for African Americans and Latinos always seem to lag behind Anglos.

I am mentioning this to you now because in your letter you do cite some things that may be beneficial in terms of some studies that will take place. But I do want to call one thing to your attention, and it has to do with something that these studies probably won't address, and it is just the issue of race itself, just race itself, plain old invidious discrimination.

We have a difficult time legitimizing invidious discrimination as a cause for unemployment being higher among certain groups. We know that it exists, but we can't get the actual empirical evidence to legitimize the existence.

Can the Fed, aside from these additional things that you will be doing, and I salute and applaud you for doing them, but can the Fed endeavor to engage in some sort of process that will allow us to acquire this empirical evidence? Because until we can present that, we still have persons who are in denial. Your response, please?

Mrs. YELLEN. It is certainly something that we can try to get at, although perhaps not definitively in studies that we do. There are studies that I am aware of, experimental-type studies, that do pretty clearly document what you are talking about, that economists have produced.

Mr. GREEN. Could we explore the possibility of allowing testing to take place within banks? That is something that we have difficulty acquiring, testing empirical evidence?

Mrs. YELLEN. I need to look into that. I am not—

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from North Carolina, Mr. Pittenger.

Mr. PITTENGER. Thank you, Mr. Chairman.

Good afternoon, Chair Yellen.

Chair Yellen, do you subscribe to the theory that monetary policy can work better if it is independent of politics?

Mrs. YELLEN. Yes, I do.

Mr. PITTENGER. In that light, does your opinion about monetary policy independence also extend to independence from distributional politics?

Mrs. YELLEN. Distributional politics? I think the Fed should be nonpolitical.

Mr. PITTENGER. Yes, ma'am.

I have reviewed some of your speeches since last March. I didn't see a lot relative to monetary policy. I did see one speech where you appeared before a community development research conference, and it was a conference on creating "a just economy." And the conference that you also spoke at on women at Brown University, the monetary policy was mentioned only one time in that speech, and that reference was in context of explaining why monetary policy is poorly equipped to address “pockets of persistently high unemployment.”

It just appears that these speeches represent efforts to address social issues in a way that establishes the limits of sound monetary policy.

Do you also worry that these in the same way it exposes monetary policy to increased risk from distributional politics?

Mrs. YELLEN. Let me say that it is my core responsibility to speak to the American people in a wide range of forums about the conduct of monetary policy in the economy, and I would disagree with your characterization of my presentations.

In March, I gave an important speech in Chicago on monetary policy. I have had two press conferences after the March and June meetings. I recently gave remarks in London bearing on the U.S. economy and monetary policy. And if you go back a little longer to January, you will see many speeches to many different audiences at many levels as well as testimony pertaining to monetary—

Mr. PITTENGER. Yes, ma’am, I was just looking at the topics of those—to the two speeches, at Brown University and at this—

Mrs. YELLEN. Let me just say that the Federal Reserve has other responsibilities, and in particular we have—

Mr. PITTENGER. Well, you understand my—

Mrs. YELLEN. —extensive programs in community development that are related to what CRA—

Mr. PITTENGER. It was just the appearance that they were political.

Mrs. YELLEN. I spoke at a conference—

Mr. PITTENGER. Can I go on?

Mrs. YELLEN. —relating to community development that was run by the Board of Governors, which is entirely appropriate.

Mr. PITTENGER. Reclaiming my time, if you don’t mind. I think I made my point that those particular ones were political.

Paul Kupiec, a resident scholar at the American Enterprise Institute, stated that, “Supervision and regulation are now so intrusive that it is not a stretch to say that the largest financial institutions are being run by the Fed.”

Do you agree with that assessment?

Mrs. YELLEN. No, I don’t.

Mr. PITTENGER. Well, do you believe it is appropriate for the Federal Reserve to engage in specific firm risk management by influencing corporate governance structures across any industry?

Mrs. YELLEN. I do believe it is appropriate—

Mr. PITTENGER. So why—then why do you—

Mrs. YELLEN. —for the Fed to ensure that there is sound corporate governance in major financial institutions. And we saw what happens when that is not the case. That was part of how we ended up with the financial crisis.

Mr. PITTENGER. So you believe that we needed more government intrusion and more government management and that would have salvaged the problem?

Mrs. YELLEN. I believe that we should ensure that—

Mr. PITTENGER. You don’t believe that the government itself played a direct role in the financial collapse that we had in terms of forcing financial institutions to make loans to people who weren't even creditworthy?

Mrs. YELLEN. I don't believe that was the main cause of the financial crisis.

Mr. PITTENGER. Many of us disagree with that.

Chair Yellen, do you believe that the Federal Reserve has the ability and the authority to usurp or preempt State corporate law?

Mrs. YELLEN. I am not sure what you have in mind there, and I am not going to give a simple yes-or-no answer to the question—

Mr. PITTENGER. Are you aware that companies that are incorporated in each State are subject to that State's corporate law requirements, including the fiduciary duties and obligations imposed upon the directors of a company's board?

Mrs. YELLEN. Okay.

Mr. PITTENGER. Do you believe that you have the ability, then, to usurp the laws?

Mrs. YELLEN. We are not usurping the laws. We are making sure that companies operate in a safe and sound fashion and that their boards of directors—

Mr. PITTENGER. If the State has laws relative to those corporate boards, do you believe that you have the authority to usurp those laws?

Mrs. YELLEN. Congress has passed laws that place obligations on us to supervise these financial institutions.

Mr. PITTENGER. My time has expired. Thank you.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Arkansas, Mr. Hill.

Mr. HILL. I thank the chairman.

And, Chair Yellen, it is nice to see you here and looking fit and rested from all your travels.

Mrs. YELLEN. Thank you.

Mr. HILL. Thanks for your perseverance in front of us.

We have talked before about monetary policy, and I haven't been a fan as a banker before I was in Congress of going beyond the Fed's initial interest rate policies. I felt like QE1, 2, and 3 didn't produce the GDP effects or the job increases that perhaps Fed policymakers at the time thought. And I have also been concerned that, as we go back and look backwards now since 2008, that Fed officials really not have—have always been a little reluctant to talk about some of the unintended consequences of that, such as distorting the price mechanism in our economy, depressing cap rates for commercial real estate, or running up equity prices, which I think are a result when you have that—we have flooded from QE2 into our economy affecting price earnings, multiples, et cetera.

But, today, I haven't heard any discussion about—we talked about the balance sheet. We talked about setting interest rates, but I want to talk a little bit about the money multiplier aspect in your toolbox. We have flooded the system with reserves, but we have a money multiplier that is down at Eccles rates, 1930s type rates. And I guess my view is, shouldn't you lower the rate of interest paid on banks on excess reserves as you are raising rates and planning this very thoughtful, careful shrinkage of the Fed's balance sheet?

Mrs. YELLEN. The interest we pay on excess reserves is our key tool to adjust the general level of short-term interest rates in the economy, and the Committee has deemed it appropriate to gradually raise the level of short-term rates as the labor market has strengthened and we have come closer to achieving our objectives. So, no, I wouldn't agree that we shouldn't be using that tool to normalize the general level of short rates in the economy.

Mr. HILL. The rates on excess reserves.

Mrs. YELLEN. That is our key tool that we use to encourage the—

Mr. HILL. How do we get the money multiplier to increase then?

Mrs. YELLEN. I guess I don't look at the impact of monetary policy on the economy through the money multiplier. I think the complex—

Mr. HILL. What do you think accounts for it being at 1930s levels when we have advanced reserves into the system as mightily as we have over the last 8 years?

Mrs. YELLEN. We had a highly depressed economy where interest rates fell close to zero and banks were willing to hold onto excess reserves given the shortage.

Mr. HILL. But my colleagues on the other side say that the lending business is booming and the economy is growing successfully, so why has the multiplier not changed? Why is the velocity still low like that, in your view? That is something we measure—that is how we measure successful Fed policy by looking at that, so I'm just curious.

Mrs. YELLEN. I wouldn't agree at all that we measure the success of Fed policy by looking at the money multiplier. I think the quantity of money and its relationship to GDP has been extremely unstable and not a good way of running monetary policy. I am not aware of any central bank that would any longer approach it that way.

Mr. HILL. And why is that? Why is it, though, that it was, between World War II and 2008, something that people looked at and it was talked about as a way that shows that we have a healthy investment and lending market and growing economy, but in the 1930s and since 2008, we are just satisfied with it that it is low and we don't say it is important anymore? Can you put some perspective on that?

Mrs. YELLEN. Both in the Great Depression and in our more recent Great Recession we have had a situation where short-term rates fell essentially to zero percent, and pushing out additional reserves was essentially what they said during the Depression was like pushing on a string, and we encountered—or a so-called liquidity trap, and the relationship then between the quantity of reserves and nominal income begins to break down in those situations. And we faced a similar situation as to what we had during the Great Depression.

Mr. HILL. My time has expired, Mr. Chairman.

Chairman HENSARLING. The time of the gentleman has expired.

The next Member will be the last Member we call upon. I now recognize the gentleman from Ohio, Mr. Davidson for 5 minutes.

Mr. DAVIDSON. Thank you, Mr. Chairman.

Chair Yellen, thank you for being here today.

I really appreciate your testimony, and thanks for the work you and the team at the Federal Reserve do to get our monetary policy right.

Mrs. YELLEN. Thank you.

Mr. DAVIDSON. I want to understand that a little bit. You talked about your policy is neutral to accommodative, but what you have started to do is at least talk about applying the brakes. You have raised rates. You're talking about how to frankly do—you talked just briefly about the supply of money being a little unstable. Well, $4 trillion of it, we know where it went, but it did create some velocity in the money supply that is nontypical. So is what you are doing now essentially gently applying the brakes if you feel like the economy is doing it—

Mrs. YELLEN. Yes, I think that is a fair characterization. We have had our foot on the gas. We have been in an accommodative stance, and as we have come closer to achieving our objectives, we have taken our foot off the gas to some extent so that we can sustain a strong recovery, but we are moving towards something closer to let's call it a neutral stance that keeps the economy operating on an even keel.

Mr. DAVIDSON. Historically, applying the brakes gently or at the right time has been a challenge, just like it has been a challenge to hit the gas. I guess everyone always feels optimistic about their course of action at the time. Generally, people say bubbles have been one of the things that have caused this miscalculation. What bubbles do you see out there in the macro economy right now?

Mrs. YELLEN. I try not to opine on the level of asset prices, although our report notes that valuations generally are toward the top of their historical ranges. What I try to think about is, if there are adjustments in asset prices, what consequences would they have on our financial system and our economy, and in that context, look for evidence that surging asset prices might be leading to imprudent borrowing, a buildup in leverage in the economy that would be dangerous if the prices were to unwind. And we are not seeing that. So we sort of judge financial stability risks at this point as moderate.

Mr. DAVIDSON. So you have laid out a good plan, and I don't really want to go over the whole thing. You have talked a lot about it, but I am particularly concerned about the role that you kind of allude to here, as we start to see instability, you kind of shift hats from monetary policy to regulator. And in the regulation you talked about really a pretty heavy hand in the sense of steering companies on policies. The Financial Times has highlighted cases where you have even, as regulator, addressed HR practices up to the point of advising terminating or replacing certain employees in companies. And at that point, I guess, how critical is it that our agent of monetary policy also serve as a regulator? I am not saying that regulation doesn't need to be done. How important is it that our central banker does that?

Mrs. YELLEN. I would say, especially in the aftermath of the financial crisis, we have found that our understanding of the economy, of the financial system, and of appropriate monetary policy has been greatly informed by the role we play in supervision. It has helped us understand risks to financial stability, pressures in particular portions of credit markets, and there has been a close integration between what we learn in bank supervision, financial stability, and monetary policy.

Mr. DAVIDSON. And most closely on the mortgage-backed securities markets, where the Fed developed a strong affinity for them and accumulated quite a lot of them, which gets to the monetary supply.

So, at this point, you are looking at some of the asset purchases that you have made, really directly interacting with a key part of the market, putting those on your balance sheet, unwinding them. You have talked about a plan to do it. You have talked about a change of plan to do it. What do you see as the risk to the monetary supply? And you talk about, not to say it is a bubble, but clearly there is going to be an effect on asset prices as you try get that right.

Mrs. YELLEN. We do believe that our asset purchase programs were effective in pushing down longer-term rates and the so-called term premium embodied in longer-term rates, and very gradually over time, as we shrink our balance sheet, I would expect some modest but, over a number of years, upward pressure on longer term rates. It is not something very substantial, but it is something that we have taken into account in deciding on what is the appropriate path for the Federal funds rate.

Mr. DAVIDSON. Thank you, Chair Yellen.

Thank you, Mr. Chairman. I yield back.

Chairman HENSARLING. The time of the gentleman has expired.

And I want to thank our witness, Chair Yellen, for her testimony today.

The Chair notes that some Members may have additional questions for this witness, which they may wish to submit in writing. Without objection, the hearing record will remain open for 5 legislative days for Members to submit written questions to this witness and to place her responses in the record. Also, without objection, Members will have 5 legislative days to submit extraneous materials to the Chair for inclusion in the record.

This hearing stands adjourned.

[Whereupon, at 1:11 p.m., the hearing was adjourned.]

A P P E N D I X

July 12, 2017

For release at
8:30 a.m. EDT
July 12, 2017

Statement by

Janet L. Yellen

Chair

Board of Governors of the Federal Reserve System

before the

Committee on Financial Services

U.S. House of Representatives

July 12, 2017

Chairman Hensarling, Ranking Member Waters, and other members of the Committee, I am pleased to present the Federal Reserve's semiannual *Monetary Policy Report* to the Congress. In my remarks today I will briefly discuss the current economic situation and outlook before turning to monetary policy.

Current Economic Situation and Outlook

Since my appearance before this committee in February, the labor market has continued to strengthen. Job gains have averaged 180,000 per month so far this year, down only slightly from the average in 2016 and still well above the pace we estimate would be sufficient, on average, to provide jobs for new entrants to the labor force. Indeed, the unemployment rate has fallen about 1/4 percentage point since the start of the year, and, at 4.4 percent in June, is 5-1/2 percentage points below its peak in 2010 and modestly below the median of Federal Open Market Committee (FOMC) participants' assessments of its longer-run normal level. The labor force participation rate has changed little, on net, this year--another indication of improving conditions in the jobs market, given the demographically driven downward trend in this series. A broader measure of labor market slack that includes workers marginally attached to the labor force and those working part time who would prefer full-time work has also fallen this year and is now nearly as low as it was just before the recession. It is also encouraging that jobless rates have continued to decline for most major demographic groups, including for African Americans and Hispanics. However, as before the recession, unemployment rates for these minority groups remain higher than for the nation overall.

Meanwhile, the economy appears to have grown at a moderate pace, on average, so far this year. Although inflation-adjusted gross domestic product is currently estimated to have increased at an annual rate of only 1-1/2 percent in the first quarter, more-recent indicators suggest that growth rebounded in the second quarter. In particular, growth in household spending, which was weak earlier in the year, has picked up in recent months and continues to be supported by job gains, rising household wealth, and favorable consumer sentiment. In addition, business fixed investment has turned up this year after having been soft last year. And a strengthening in economic growth abroad has provided important support for U.S. manufacturing production and exports. The housing market has continued to recover gradually, aided by the ongoing improvement in the labor market and mortgage rates that, although up somewhat from a year ago, remain at relatively low levels.

With regard to inflation, overall consumer prices, as measured by the price index for personal consumption expenditures, increased 1.4 percent over the 12 months ending in May, up from about 1 percent a year ago but a little lower than earlier this year. Core inflation, which excludes energy and food prices, has also edged down in recent months and was 1.4 percent in May, a couple of tenths below the year-earlier reading. It appears that the recent lower readings on inflation are partly the result of a few unusual reductions in certain categories of prices; these reductions will hold 12-month inflation down until they drop out of the calculation. Nevertheless, with inflation continuing to run below the Committee's 2 percent longer-run objective, the FOMC indicated in its June statement that it intends to carefully monitor actual and expected progress toward our symmetric inflation goal.

Looking ahead, my colleagues on the FOMC and I expect that, with further gradual adjustments in the stance of monetary policy, the economy will continue to expand at a moderate pace over the next couple of years, with the job market strengthening somewhat further and inflation rising to 2 percent. This judgment reflects our view that monetary policy remains accommodative. Ongoing job gains should continue to support the growth of incomes and, therefore, consumer spending; global economic growth should support further gains in U.S. exports; and favorable financial conditions, coupled with the prospect of continued gains in domestic and foreign spending and the ongoing recovery in drilling activity, should continue to support business investment. These developments should increase resource utilization somewhat further, thereby fostering a stronger pace of wage and price increases.

Of course, considerable uncertainty always attends the economic outlook. There is, for example, uncertainty about when--and how much--inflation will respond to tightening resource utilization. Possible changes in fiscal and other government policies here in the United States represent another source of uncertainty. In addition, although the prospects for the global economy appear to have improved somewhat this year, a number of our trading partners continue to confront economic challenges. At present, I see roughly equal odds that the U.S. economy's performance will be somewhat stronger or somewhat less strong than we currently project.

Monetary Policy

I will now turn to monetary policy. The FOMC seeks to foster maximum employment and price stability, as required by law. Over the first half of 2017, the Committee continued to gradually reduce the amount of monetary policy accommodation. Specifically, the FOMC raised the target range for the federal funds rate by 1/4 percentage point at both its March and June meetings, bringing the target to a range of 1 to 1-1/4 percent. In doing so, the Committee recognized the considerable progress the economy had made--and is expected to continue to make--toward our mandated objectives.

The Committee continues to expect that the evolution of the economy will warrant gradual increases in the federal funds rate over time to achieve and maintain maximum employment and stable prices. That expectation is based on our view that the federal funds rate remains somewhat below its neutral level--that is, the level of the federal funds rate that is neither expansionary nor contractionary and keeps the economy operating on an even keel. Because the neutral rate is currently quite low by historical standards, the federal funds rate would not have to rise all that much further to get to a neutral policy stance. But because we also anticipate that the factors that are currently holding down the neutral rate will diminish somewhat over time, additional gradual rate hikes are likely to be appropriate over the next few years to sustain the economic expansion and return inflation to our 2 percent goal. Even so, the Committee continues to anticipate that the longer-run neutral level of the federal funds rate is likely to remain below levels that prevailed in previous decades.

As I noted earlier, the economic outlook is always subject to considerable uncertainty, and monetary policy is not on a preset course. FOMC participants will adjust their assessments of the appropriate path for the federal funds rate in response to changes to their economic outlooks and to their judgments of the associated risks as informed by incoming data. In this regard, as we noted in the FOMC statement last month, inflation continues to run below our 2 percent objective and has declined recently; the Committee will be monitoring inflation developments closely in the months ahead.

In evaluating the stance of monetary policy, the FOMC routinely consults monetary policy rules that connect prescriptions for the policy rate with variables associated with our mandated objectives. However, such prescriptions cannot be applied in a mechanical way; their use requires careful judgments about the choice and measurement of the inputs into these rules, as well as the implications of the many considerations these rules do not take into account. I would like to note the discussion of simple monetary policy rules and their role in the Federal Reserve's policy process that appears in our current *Monetary Policy Report.*

Balance Sheet Normalization

Let me now turn to our balance sheet. Last month the FOMC augmented its Policy Normalization Principles and Plans by providing additional details on the process that we will follow in normalizing the size of our balance sheet. The Committee intends to gradually reduce the Federal Reserve's securities holdings by decreasing its reinvestment of the principal payments it receives from the securities held in the System Open Market Account. Specifically, such payments will be reinvested only to the extent that they exceed gradually rising caps. Initially, these caps will be set at relatively low levels to limit the volume of securities that private investors will have to absorb. The Committee currently expects that, provided the economy evolves broadly as anticipated, it will likely begin to implement the program this year.

Once we start to reduce our reinvestments, our securities holdings will gradually decline, as will the supply of reserve balances in the banking system. The longer-run normal level of reserve balances will depend on a number of as-yet-unknown factors, including the banking system's future demand for reserves and the Committee's future decisions about how to implement monetary policy most efficiently and effectively. The Committee currently anticipates reducing the quantity of reserve balances to a level that is appreciably below recent levels but larger than before the financial crisis.

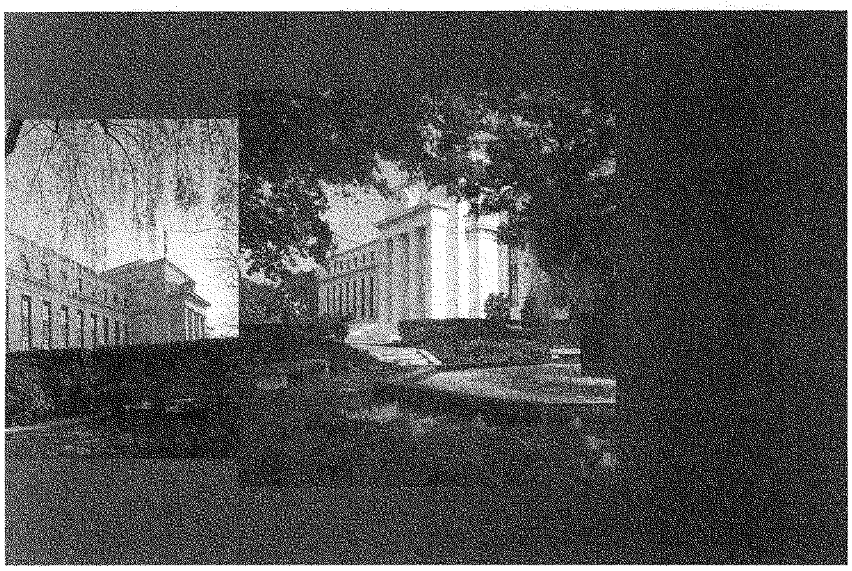
Finally, the Committee affirmed in June that changing the target range for the federal funds rate is our primary means of adjusting the stance of monetary policy. In other words, we do not intend to use the balance sheet as an active tool for monetary policy in normal times. However, the Committee would be prepared to resume reinvestments if a material deterioration in the economic outlook were to warrant a sizable reduction in the federal funds rate. More generally, the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate.

Thank you. I would be pleased to take your questions.

For use at 11:00 a.m., EDT
July 7, 2017

Monetary Policy Report

July 7, 2017



Board of Governors of the Federal Reserve System

Letter of Transmittal

Board of Governors of the
Federal Reserve System

Washington, D.C., July 7, 2017

The President of the Senate
The Speaker of the House of Representatives

The Board of Governors is pleased to submit its *Monetary Policy Report* pursuant to section 2B of the Federal Reserve Act.

Sincerely,

Janet L. Yellen

Janet L. Yellen, Chair

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as amended effective January 31, 2017

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Inflation, employment, and long-term interest rates fluctuate over time in response to economic and financial disturbances. Moreover, monetary policy actions tend to influence economic activity and prices with a lag. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances. The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measurable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.8 percent.

In setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessments of its maximum level. These objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it follows a balanced approach in promoting them, taking into account the magnitude of the deviations and the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January.

Contents

Note: This report reflects information that was publicly available as of noon EDT on July 6, 2017. Unless otherwise stated, the time series in the figures extend through, for daily data, July 5, 2017; for monthly data, June 2017; and, for quarterly data, 2017:Q1. In bar charts, except as noted, the change for a given period is measured to its final quarter from the final quarter of the preceding period.

Summary

Economic activity increased at a moderate pace over the first half of the year, and the jobs market continued to strengthen. Measured on a 12-month basis, inflation has softened some in the past few months. The Federal Open Market Committee (FOMC) judged that, on balance, current and prospective economic conditions called for a further gradual removal of policy accommodation. At its most recent meeting in June, the Committee boosted the target range for the federal funds rate to 1 to 1¼ percent. The Committee also issued additional information regarding its plans for reducing the size of its balance sheet in a gradual and predictable manner.

Economic and Financial Developments

Labor markets. The labor market has strengthened further so far this year. Over the first five months of 2017, payroll employment increased 162,000 per month, on average, somewhat slower than the average monthly increase for 2016 but still more than enough to absorb new entrants into the labor force. The unemployment rate fell from 4.7 percent in December to 4.3 percent in May—modestly below the median of FOMC participants' estimates of its longer-run normal level. Other measures of labor utilization are also consistent with a relatively tight labor market. However, despite the broad-based strength in measures of employment, wage growth has been only modest, possibly held down by the weak pace of productivity growth in recent years.

Inflation. Consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures, briefly reached the FOMC's 2 percent objective earlier this year, but it more recently has softened. The latest reading, for May, was 1.4 percent—still up from a year earlier when falling energy prices restrained overall consumer prices. The 12-month measure of inflation that excludes food and energy items (so-called core inflation), which historically has been a better indicator than the headline figure of where overall inflation will be in the future, was also 1.4 percent over the year ending in May; this reading was a bit lower than it had been one year earlier. Measures of longer-run inflation expectations have been relatively stable, on balance, though some measures remain low by historical standards.

Economic growth. Real gross domestic product (GDP) is reported to have risen at an annual rate of about 1½ percent in the first quarter of 2017, but more recent data suggest growth stepped back up in the second quarter. Consumer spending was sluggish in the early part of the year but appears to have rebounded recently, supported by job gains, rising household wealth, and favorable consumer sentiment. Business investment has turned up this year after having been weak for much of 2016, and indicators of business sentiment have been strong. The housing market continues its gradual recovery. Economic growth has also been supported by recent strength in foreign activity.

Financial conditions. On balance, domestic financial conditions for businesses and households have continued to support economic growth. Long-term nominal Treasury yields and mortgage rates have decreased so far in 2017, although yields remain somewhat above levels that prevailed last summer. Broad measures of equity prices increased further during the first half of the year. Spreads of yields on corporate bonds over comparable-maturity Treasury securities decreased. Most types of consumer loans remained widely available, while mortgage credit stayed readily available for households with solid credit profiles but was still difficult to access for households with low credit scores or harder-to-document incomes.

In foreign financial markets, equity prices increased and risk spreads decreased amid generally firming economic growth and robust corporate earnings. The broad U.S. dollar index depreciated modestly against foreign currencies.

Financial stability. Vulnerabilities in the U.S. financial system remained, on balance, moderate. Contributing to the financial system's improved resilience, U.S. banks have substantial amounts of capital and liquidity. Valuation pressures across a range of assets and several indicators of investor risk appetite have increased further since mid-February. However, these developments in asset markets have not been accompanied by increased leverage in the financial sector, according to available metrics, or increased borrowing in the nonfinancial sector. Household debt as a share of GDP continues to be subdued, and debt owed by nonfinancial businesses, although elevated, has been either flat or falling in the past two years. (See the box "Developments Related to Financial Stability" in Part 1.)

Monetary Policy

Interest rate policy. Over the first half of 2017, the FOMC continued to gradually reduce the amount of monetary policy accommodation. Specifically, the Committee decided to raise the target range for the federal funds rate in March and in June, bringing it to the current range of 1 to 1¼ percent. Even with these rate increases, the stance of monetary policy remains accommodative, supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.

The FOMC continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace and labor market conditions will strengthen somewhat further. Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. The federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. Consistent with this outlook, in the most recent Summary of Economic Projections (SEP), compiled at the time of the June FOMC meeting, most participants projected that the appropriate level of the federal funds rate would be below its longer-run level through 2018. (The June SEP is presented in Part 3 of this report.) However, as the Committee has continued to emphasize, monetary policy is not on a preset course; the actual path of the federal funds rate will depend on the evolution of the economic outlook as informed by incoming data. In particular, the Committee is monitoring inflation developments closely.

Balance sheet policy. To help maintain accommodative financial conditions, the Committee has continued its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and rolling over maturing Treasury securities at auction. In June, the FOMC issued an Addendum to the Policy Normalization Principles and Plans that provides additional details regarding the approach the FOMC intends to follow to reduce the Federal Reserve's holdings of Treasury and agency securities in a gradual and predictable manner. The Committee currently expects to begin implementing the balance sheet normalization program this year provided that the economy evolves broadly as anticipated. (See the box "Addendum to the Policy Normalization Principles and Plans" in Part 2.)

Special Topics

Education and climbing the economic ladder. Education, particularly a college degree, is often seen as a path to improved economic opportunities. However, despite the fact that young blacks and Hispanics have increased their educational attainment over the past quarter-century, their representation in the top 25 percent of the income distribution for young people has not materially increased. In part, this outcome has occurred because educational attainment has increased for young non-Hispanic whites and Asians as well. While education continues to be an important determinant of whether one can climb the economic ladder, sizable differences in economic outcomes across race and ethnicity remain even after controlling for educational attainment. (See the box "Does Education Determine Who Climbs the Economic Ladder?" in Part 1.)

The global productivity slowdown. Over the past decade, labor productivity growth both in the United States and in other advanced economies has slowed markedly. This slowdown may reflect a waning of the effects from advances in information technology in the 1990s and early 2000s. Productivity growth may also be low because of the severity of the Global Financial Crisis, in part because spending for research and development was muted. Some of the factors restraining productivity growth may eventually fade, but it is difficult to ascertain whether the recent subdued performance of productivity represents a new normal. (See the box "Productivity Developments in the Advanced Economies" in Part 1.)

Liquidity in the corporate bond market. A series of changes, including regulatory reforms, since the Global Financial Crisis have likely altered financial institutions' incentives to provide liquidity. Many market participants are particularly concerned with liquidity in markets for corporate bonds. However, the available evidence suggests that financial markets have performed well in recent years, with minimal impairment in liquidity, either in the market for corporate bonds or in markets for other assets. (See the box "Recent Developments in Corporate Bond Market Liquidity" in Part 1.)

Monetary policy rules. Monetary policymakers consider a wide range of information on current economic conditions and the outlook before deciding on a policy stance they deem most likely to foster the FOMC's statutory mandate of maximum employment and stable prices. They also routinely consult monetary policy rules that connect prescriptions for the policy interest rate with variables associated with the dual mandate. The use of such rules requires careful judgments about the choice and measurement of the inputs into these rules as well as the implications of the many considerations these rules do not take into account. (See the box "Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process" in Part 2.)

PART 1
RECENT ECONOMIC AND FINANCIAL DEVELOPMENTS

Domestic Developments

The labor market tightened further during the first half of the year . . .

Labor market conditions continued to strengthen in the first five months of this year. On average, payrolls expanded 162,000 per month between January and May, a little slower than the average monthly employment gain in 2016 but still more than enough to absorb new entrants to the labor force and therefore consistent with a further tightening of the labor market (figure 1). The unemployment rate has declined 0.4 percentage point since December 2016, and in May it stood at 4.3 percent, its lowest level since late 2000 and modestly below the median of Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level.

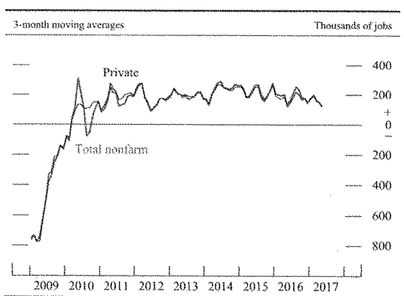
The labor force participation rate (LFPR)—that is, the share of adults either working or actively looking for work—was 62.7 percent in May and is little changed, on net, since early 2014 (figure 2). Along with other factors, the aging of the population implies a downward trend in participation, so the flattening out of the LFPR during the past few years is consistent with an overall picture of improving labor market conditions. The employment-to-population ratio—that is, the share of the population that is working—was 60 percent in May and has been increasing for the past couple of years, reflecting the combination of the declining unemployment rate and the flat LFPR.

The strengthening condition of the labor market is evident in other measures as well. The number of people filing initial claims for unemployment insurance has fallen to the lowest level in decades. In addition, as reported in the Job Openings and Labor Turnover Survey, the rate of job openings remained elevated in the first part of the year, while the rate of layoffs remained low; both are signs that firms' demand for labor is still solid. In addition, the rate of quits stayed high, an indication that workers are confident in their ability to obtain a new job. Another measure, the share of workers who are working part time but would prefer to be employed full time—which is part of the U-6 measure of underutilization from the Bureau of Labor Statistics—fell noticeably further in the first five months of 2017 (figure 3).

. . . though unemployment rates remain elevated for some demographic groups

Although the aggregate unemployment rate was at a 16-year low in May, there are substantial disparities across demographic groups (figure 4). Notably, the unemployment rate for whites averaged 4 percent during the first five months of the year, and the rate for Asians was about 3½ percent. However, the unemployment rates for Hispanics (5.4 percent) and African Americans (7.8 percent) were substantially higher. The differences in the unemployment rates across racial and ethnic groups are long-standing, and they also vary over the business cycle.

1. Net change in payroll employment



NOTE: The data extend through May 2017.
SOURCE: Department of Labor, Bureau of Labor Statistics.

2. Labor force participation rate and employment-to-population ratio

NOTE: The data extend through May 2017. Both series are a percentage of the population aged 16 and over.
SOURCE: Department of Labor, Bureau of Labor Statistics.

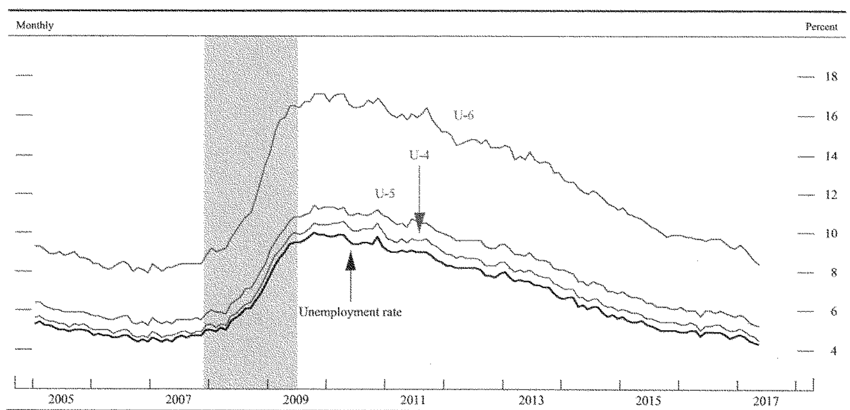
Indeed, the unemployment rates for blacks and Hispanics both rose considerably more than the rates for whites and Asians during the Great Recession, and their subsequent declines have been more rapid. On balance, however, the differences in unemployment rates across the groups have not narrowed relative to the pre-recession period. (For additional discussion on differences in economic outcomes by race and ethnicity, see the box "Does Education Determine Who Climbs the Economic Ladder?")

Growth of labor compensation has been modest . . .

Indicators of hourly compensation suggest that wage growth has remained modest. Growth of compensation per hour in the business sector—a broad-based measure of wages, salaries, and benefits—has slowed in recent quarters and was 2¼ percent over the four quarters ending in 2017:Q1 (figure 5).[1]

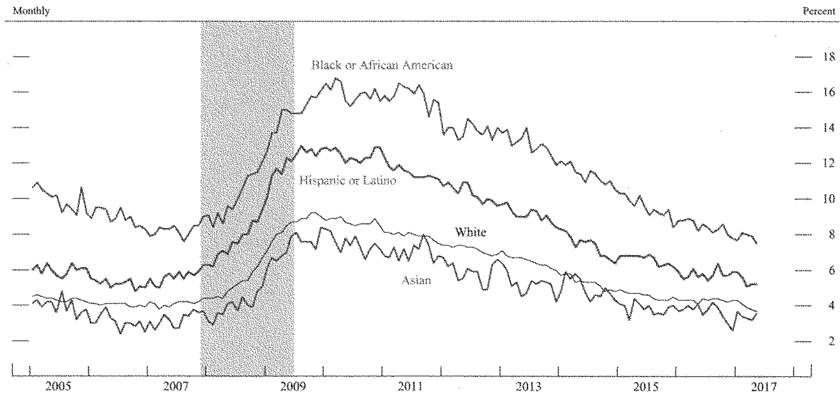
1. The recent data on compensation per hour reflect a decline in wages and salaries at the end of 2016, which

3. Measures of labor underutilization



NOTE: The data extend through May 2017. Unemployment rate measures total unemployed as a percentage of the labor force. U-4 measures total unemployed plus discouraged workers, as a percentage of the labor force plus discouraged workers. Discouraged workers are a subset of marginally attached workers who are not currently looking for work because they believe no jobs are available for them. U-5 measures total unemployed plus all marginally attached to the labor force, as a percentage of the labor force plus persons marginally attached to the labor force. Marginally attached workers are not in the labor force, want and are available for work, and have looked for a job in the past 12 months. U-6 measures total unemployed plus all marginally attached workers plus total employed part time for economic reasons, as a percentage of the labor force plus all marginally attached workers. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.
SOURCE: Department of Labor, Bureau of Labor Statistics.

4. Unemployment rate by race and ethnicity

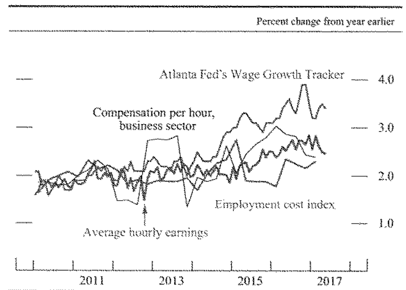


NOTE: The data extend through May 2017. Unemployment rate measures total unemployed as a percentage of the labor force. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.

SOURCE: Department of Labor, Bureau of Labor Statistics.

This measure can be quite volatile even at annual frequencies (and a smoothed version is shown in figure 5 for that reason). The employment cost index—which also measures both wages and the cost to employers of providing benefits—also was up 2¼ percent in the first quarter relative to its year-ago level, about ½ percentage point faster than its gain of a year earlier. Among measures limited to wages, average hourly earnings growth—at 2½ percent through May—was little changed from a year ago, and a compensation measure computed by the Federal Reserve Bank of Atlanta that tracks median 12-month wage growth of individuals reporting to the Current Population Survey was about 3½ percent in May, also similar to its reading from a year earlier.

5. Measures of change in hourly compensation



NOTE: Business-sector compensation is the four-quarter percentage change of the four-quarter moving average. For the employment cost index, change is over the 12 months ending in the last month of each quarter; for average hourly earnings, change is from 12 months earlier, and the data extend through May 2017; for the Atlanta Fed's Wage Growth Tracker, the data are shown as a three-month moving average of the 12-month percent change and extend through May 2017.

SOURCE: Department of Labor, Bureau of Labor Statistics; Federal Reserve Bank of Atlanta, Wage Growth Tracker.

might be the result of a shifting of bonuses or other types of income into 2017 in anticipation of a possible cut in personal income tax rates. If that is the case, the current estimate of compensation growth in the first quarter might be revised up once full data become available later this summer.

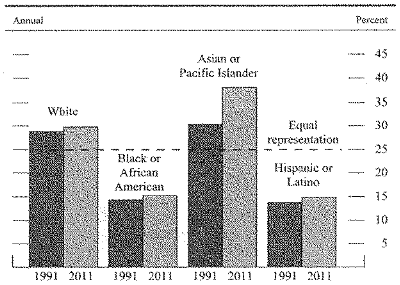
Does Education Determine Who Climbs the Economic Ladder?

The persistent gaps in economic outcomes by race and ethnicity in the United States raise important questions about how people ascend the economic ladder. Education, particularly a college degree, is often seen as a path to improved economic opportunities. Past research has shown that human capital in the form of education and experience can explain about one-third of the variation in wages across individuals.[1] However, while education continues to be an important determinant of whether one can climb the economic ladder, sizable differences in economic outcomes across race and ethnicity remain even after controlling for educational attainment.

Data on earnings for two cohorts of young adult workers (aged 25 to 34) approximately a generation apart confirm both the gaps in economic outcomes and the lack of substantial upward progress for disadvantaged groups over the past quarter-century (figure A). People of this age typically have limited years of work experience, but most have completed their schooling. Therefore, focusing on young adults allows us to better isolate the effect of education from the influence of other variables, including experience. Furthermore, research has shown that the level of wages received early in an individual's career persists over time and influences that individual's wage trajectory for years to come.[2] The figure shows the fraction of each group that has reached the top quartile of earnings for young adults as a whole. The black dashed line at 25 percent marks the fraction of each group that would be in this top quartile if each group were equally represented in proportion to its population size.[3]

Non-Hispanic whites, for example, are overrepresented in the top 25 percent of the earnings distribution of young adults for both cohorts, with just under 30 percent of the group in the top quartile in both the 1991–95 and 2011–15 periods. Black or African American young adults are underrepresented in the top quartile in both periods, at about 15 percent. Hispanics are likewise underrepresented, and again there has been little improvement over time. Asians stand out in terms of both high representation and changes over time, though these measures obscure the very high levels of inequality within this group.[4]

A. Percent of workers in top quartile of earnings among all young adults



NOTE: Data cover the preceding calendar year. Young adults include those aged 25 to 34. Earnings include wages, salaries, business income, and farm income. Threshold for crossing into the top earnings quartile is based on workers aged 25 to 34 only. The black dashed line marks 25 percent, the fraction of each group that would be in the top quartile if each group were equally represented in proportion to its population size.

SOURCE: U.S. Census Bureau, Current Population Survey, March 1992–2016.

1. Pedro Carneiro and James J. Heckman (2003), "Human Capital Policy," in Benjamin M. Friedman, ed., *Inequality in America: What Role for Human Capital Policies?* (Cambridge, Mass.: MIT Press), pp. 77–239.

2. See, for example, past research that shows that the average starting wage faced by a cohort is correlated with wages later on, such as George Baker, Michael Gibbs, and Bengt Holmstrom (1994), "The Wage Policy of a Firm," *Quarterly Journal of Economics,* vol. 109 (November), pp. 921–55. Furthermore, research also shows that higher national unemployment rates faced by a cohort are also correlated with lower wages later on; for instance, see Paul Beaudry and John DiNardo (1991), "The Effect of Implicit Contracts on the Movement of Wages over the Business Cycle: Evidence from Micro Data," *Journal of Political Economy,* vol. 99 (August), pp. 665–88; and Lisa B. Kahn (2010), "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy," *Labour Economics,* vol. 17 (April), pp. 303–16.

3. In other words, if 25 percent of a group reached the top quartile, then that group's share of the top quartile would be the same as its share in the full population.

4. See, for example, Christian E. Weller and Jeffrey Thompson (2016), *Wealth Inequality among Asian Americans Greater Than among Whites,* Center for American Progress (Washington: CFAP, December 20), https://www.americanprogress.org/issues/race/reports/2016/12/20/295359/wealth-inequality-among-asian-americans-greater-than-among-whites.

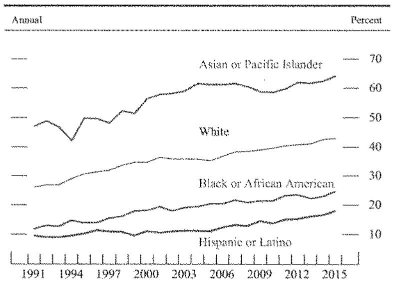
Note that it is possible for the within-group representation in the top quartile to improve for all groups because the composition of the young adult population by race and ethnicity is itself changing, with whites becoming a much smaller share and all other groups being stable or increasing as a share of the total population.

Overall, the representation of black and Hispanic workers in the top earnings quartile continues to lag in the later period. This lag in representation occurs despite the gains in educational attainment—the critical driver of improved incomes—that blacks and Hispanics have achieved over time. For both blacks and Hispanics, the share achieving a bachelor's degree or higher has doubled over the period of study (figure B). However, even with these improvements, the educational attainment gap between each of those groups and whites persists, because the fraction of whites attaining a bachelor's degree has also increased substantially in the past quarter-century.

Across all groups, it is true that completing a bachelor's degree or higher roughly doubles one's chances of reaching the top 25 percent of earners (figure C). This relationship strongly corroborates the conventional wisdom that, for many individuals, a college education can indeed represent a path to improved economic opportunities. However, even within this group, representation is substantially unequal, with college-educated white and Asian people much more likely to achieve the top quartile of income than their black or African American and Hispanic or Latino peers.

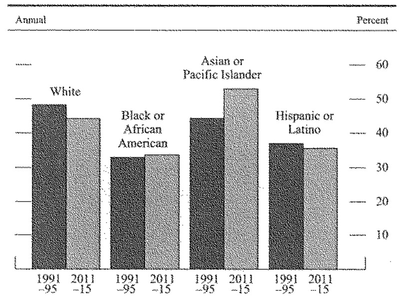
Here the interpretation of changes over time is a bit more nuanced, because the overall increase in college attainment among young adults implies increased competition for crossing into the top quartile of earnings. In the 1991–95 period, 35 percent of

B. Percent of young adults with a bachelor's degree or higher



NOTE: Data cover the preceding calendar year. Young adults include those aged 25 to 34.
SOURCE: U.S. Census Bureau, Current Population Survey, March 1992–2016.

C. Percent of workers with a bachelor's degree in top quartile of earnings among all young adults



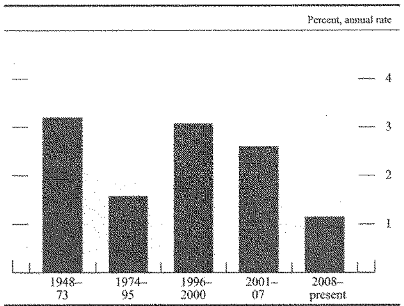
NOTE: Data cover the preceding calendar year. Young adults include those aged 25 to 34. Earnings include wages, salaries, business income, and farm income. Threshold for crossing into the top earnings quartile is based on workers aged 25 to 34 only.
SOURCE: U.S. Census Bureau, Current Population Survey, March 1992–2016.

those in the top income quartile had only a bachelor's degree, and an additional 14 percent had gone on to receive a graduate degree. By the period from 2011 to 2015, these shares had risen to 42 percent and 24 percent, respectively, suggesting that the average skill level needed to reach the top quartile of income has increased between generations.

Taken together, these observations show that educational attainment can help young adults improve their lifetime earning potential. However, increased levels of educational attainment across all groups have created greater competition for positions at the top of the economic ladder. Even among those with college degrees, important differences remain in representation at the top of the income distribution by race and ethnicity. The relationship between educational attainment and economic outcomes is complex and heterogeneous across people, suggesting that the specific nature of that attainment—the types of degrees received and the specific schools attended, among other factors—may matter much more than previously thought.[5]

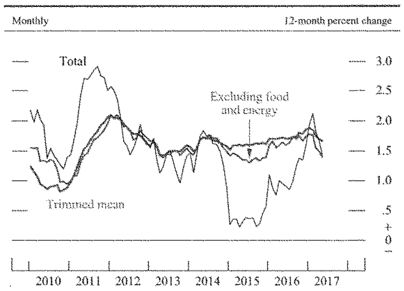
5. See, in particular, Raj Chetty, John Friedman, Emmanuel Saez, Nicholas Turner, and Danny Yagan (2017), "Mobility Report Cards: The Role of Colleges in Intergenerational Mobility," paper, Equality of Activity Project (Stanford, Calif.: Stanford University, EOAP), www.equality-of-opportunity.org/papers/coll_mrc_paper.pdf.

6. Change in business-sector output per hour



NOTE: Changes are measured from Q4 of the year immediately preceding the period through Q4 of the final year of the period. The final period is measured from 2007:Q4 through 2017:Q1.
SOURCE: Department of Labor, Bureau of Labor Statistics.

7. Change in the price index for personal consumption expenditures



NOTE: The data extend through May 2017; changes are from one year earlier.
SOURCE: For trimmed mean, Federal Reserve Bank of Dallas; for all else, U.S. Department of Commerce, Bureau of Economic Analysis.

. . . and likely restrained by slow growth of labor productivity

These modest rates of compensation gain likely reflect the offsetting influences of a tightening labor market and persistently weak productivity growth. Since 2008, labor productivity has increased only about 1 percent per year, on average, well below the average pace from 1996 through 2007 and also below the gains in the 1974–95 period (figure 6). For most of the period since 2011, labor productivity growth has been particularly weak, although it has turned up in recent quarters. The longer-term softness in productivity growth may be partly attributable to the sharp pullback in capital investment during the most recent recession and the relatively modest rebound that followed. But there may be other explanations, too, and considerable debate remains about the reasons for the general slowdown in productivity growth. (For a more comprehensive discussion of productivity, see the box "Productivity Developments in the Advanced Economies.")

Price inflation moved up but softened in the spring and remains below 2 percent

In the early months of 2017, consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures (PCE), continued its climb from the very low levels that prevailed in 2015 and early 2016 when it was held down by falling oil and import prices. Indeed, consumer price inflation briefly reached the FOMC's 2 percent objective earlier this year before falling back to 1.4 percent in May (figure 7). Core inflation, which typically provides a better indication than the headline measure of where overall inflation will be in the future, also was 1.4 percent over the 12 months ending in May, a slightly slower rate than a year earlier. As is the case with headline inflation, the 12-month measure of core inflation had been higher earlier this year, reaching 1.8 percent. Both measures of inflation have recently been held down by steep and likely idiosyncratic price declines for a few specific categories, including wireless telephone services and prescription drugs, which do not appear to be related to the overall trends in consumer prices. The 12-month change in the trimmed mean PCE price index—an alternative indicator of underlying inflation produced by the Federal Reserve Bank of Dallas—slowed by less than overall or core PCE price inflation over the past several months.

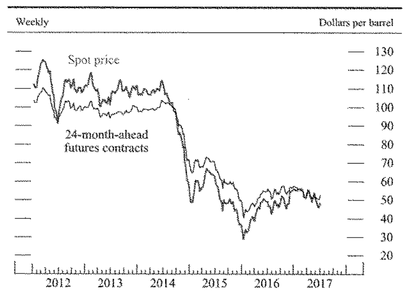
Oil prices declined somewhat but remain well above their early 2016 lows . . .

After rebounding from their early 2016 lows, oil prices leveled off early this year (figure 8). Since then they have declined somewhat, despite OPEC's decision in late May to renew its November 2016 agreement to reduce its oil production, thereby extending the November production cuts through early 2018. Reflecting lower crude oil prices as well as smaller retail margins, seasonally adjusted retail gasoline prices have also declined since the beginning of the year. Nevertheless, prices of both crude oil and retail gasoline remain above their early 2016 lows, and futures prices suggest that market participants expect oil prices to rise gradually in coming years.

. . . while prices of imports other than energy have been bolstered by higher commodity prices

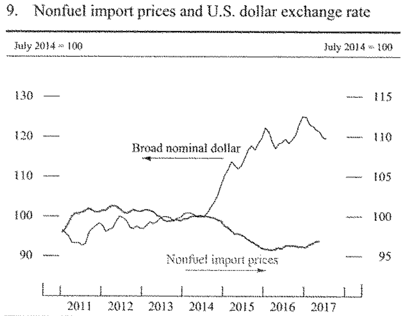
Throughout 2015, nonfuel import prices declined because of appreciation of the dollar and declines in nonfuel commodity prices (figure 9). Nonfuel import prices stabilized last year and have risen since then, as the dollar stopped appreciating and supply disruptions boosted world prices of some nonfuel commodities, especially industrial supplies and metals. In recent months, depreciation of the dollar has further pushed up non-oil import prices, which are now slightly higher than in mid-2016.

8. Brent spot and futures prices



NOTE: The data are weekly averages of daily data and extend through July 5, 2017.
SOURCE: NYMEX via Bloomberg.

9. Nonfuel import prices and U.S. dollar exchange rate



NOTE: The data are monthly, and the data for nonfuel import prices extend through May 2017.
SOURCE: Department of Labor, Bureau of Labor Statistics; Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

Productivity Developments in the Advanced Economies

The slow pace of U.S. productivity growth has attracted much attention of late, with vigorous debate on whether the slowdown represents the lingering, but temporary, effect of the Global Financial Crisis (GFC) or marks the start of an era of prolonged lower economic growth. This discussion reviews recent productivity developments in the United States and the major advanced foreign economies (AFEs) and outlines possible causes of the slowdown.[1]

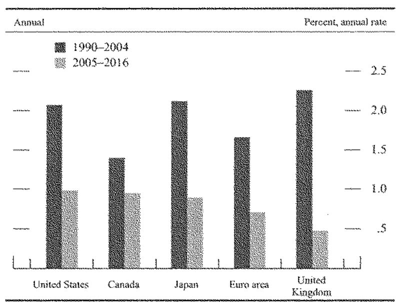
Over the past decade, labor productivity growth in advanced economies has weakened markedly (figure A). Labor productivity growth in the United States has averaged only 1 percent since 2005, about half the pace of the years 1990 to 2004.[2] Productivity growth has been even weaker in the AFEs, with the United Kingdom experiencing a meager ½ percent growth. As shown in the table, the widespread slowdown in labor productivity growth reflects weak capital deepening and, more importantly, very poor performance of total factor productivity (TFP)—a measure of how efficiently labor and capital are combined to produce output.[3] TFP across the advanced economies has stagnated in the past decade against historical average growth of about ¾ percent.

1. Emerging market economies have also experienced declines in productivity growth in recent years, although not necessarily for the same reasons as in the advanced economies.

2. Here labor productivity is measured as overall gross domestic product per hour, in contrast to the business-sector measure shown in the main text. Productivity growth is faster in the business sector.

3. Capital deepening refers to increases in the amount of capital per worker.

A. Labor productivity growth



NOTE: Labor productivity is constructed as real gross domestic product per hour worked.
SOURCE: The Conference Board, Total Economy Database.

Accounting for labor productivity growth, 2005–2016

	Labor productivity growth	Contribution of capital deepening	Contribution of total factor productivity
United States	1	.7	.3
Canada	.9	1	-.1
Japan	.9	.9	0
Euro area	.7	.8	0
United Kingdom	.5	.5	0
Cross-country average			
2005–2016	.8	.8	0
1990–2004	1.9	1.2	.7

NOTE: Average annual rates.
SOURCE: The Conference Board, Total Economy Database.

A number of potential explanations have been put forward for the abysmal performance of TFP. Some authors emphasize structural factors that predate the GFC. For example, Gordon (2012) sees recent technological advances such as information technology (IT) as less revolutionary than earlier general-purpose technologies like electricity and internal combustion.[4] Relatedly, Fernald (2015) provides evidence that the effects of the IT revolution—an important factor boosting productivity since the 1990s—began to fade in the early 2000s.[5] There are signs, however, that the influence of IT is still spreading, as exemplified by the surge in cloud-computing technology investments in recent years, and we may not yet have reaped the full benefits of this major technological innovation. Under this more optimistic view, slow TFP growth may reflect a temporary "productive pause" as firms spend resources on activities such as equipment retooling, reorganization of management practices, and workforce training. After all, it took several decades for the full effect of electricity to materialize.[6]

4. Robert J. Gordon (2012), "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds," NBER Working Paper Series 18315 (Cambridge, Mass.: National Bureau of Economic Research, August).

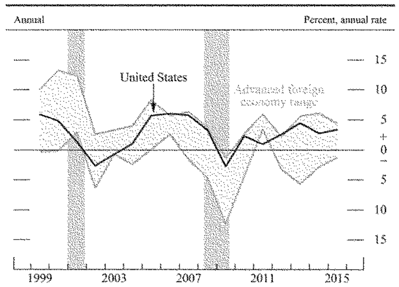
5. John G. Fernald (2015), "Productivity and Potential Output before, during, and after the Great Recession," in Jonathan A. Parker and Michael Woodford, eds., *NBER Macroeconomics Annual 2014*, vol. 29 (Chicago: University of Chicago Press), pp. 1–51.

6. For a description of the lengthy process of diffusion of electrification, see Paul A. David (1990), "The Dynamo and the Computer: An Historical Perspective on the Modern Productivity Paradox," *American Economic Review*, vol. 80 (May), pp. 355–61.

Other explanations blame the weak TFP growth on the unusual severity of the GFC. Some empirical evidence suggests that the "Schumpeterian" process in which workers move toward higher-productivity firms—a key source of productivity growth following previous recessions—has been greatly impaired since the GFC.[7] In addition, measures of innovation such as research and development (R&D) spending fell sharply during the GFC, as shown in figure B, partly in response to tight financial conditions and weak demand. Declines in R&D tend to induce gradual and persistent declines in TFP, suggesting that the recent low TFP growth may in part be traced to GFC-induced weakness in R&D.[8] In this view, the recent pickup in R&D spending could anticipate some normalization in productivity growth. Finally, the slowdown in TFP growth may also be related to the slowdown of global trade in the wake of the GFC. Conventional trade theories suggest that greater trade integration should bring productivity gains by facilitating the diffusion of new technologies and by allowing countries to specialize in the production of goods for which they have a comparative advantage. After decades of steady increases, however, trade integration appears to have plateaued in recent years (figure C).

In sum, it is difficult to ascertain whether the recent subdued performance of labor productivity represents a new normal. Some of the GFC-related factors restraining productivity growth may eventually fade, leading to a rise in productivity growth from its anemic post-GFC pace. However, to the extent that longer-run factors—such as the waning effects of the IT revolution—are at work, productivity growth in the future may be noticeably below historical averages. Sustained low rates of productivity growth would greatly restrain the improvement of living standards. In addition, they would put downward pressure on the long-run neutral interest rate, making the policy rate more likely to reach its effective lower bound and thus constraining the ability of monetary policy to provide economic stimulus, even in the presence of shallow recessions.

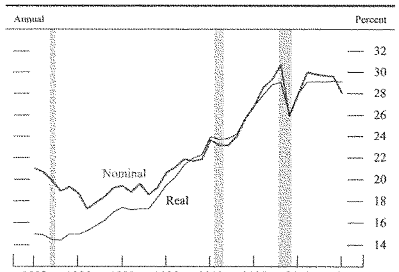
B. Change in private real research and development



Note: "Advanced foreign economy range" is the min-max range for Canada, Japan, the euro area, and the United Kingdom. U.S. data refer to real research and development (R&D) spending. Advanced foreign economy data refer to nominal R&D spending (in national currency) deflated by the gross domestic product (GDP) deflator. The shaded bars indicate periods of global recession defined as 55 percent of world GDP in recession.

Source: Department of Commerce, Bureau of Economic Analysis for the United States; advanced foreign economies data downloaded from OECD Science, Technology and R&D Statistics, June 7, 2017; recession data are from Economic Cycle Research Institute (ECRI).

C. World trade as a share of gross domestic product



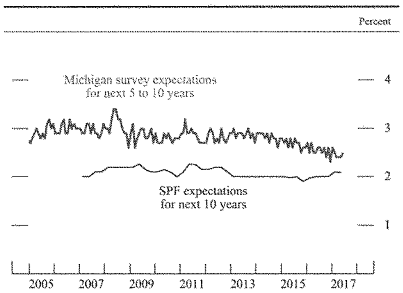
Note: The shaded bars indicate periods of global recession defined as 55 percent of world gross domestic product in recession.

Source: World Development Indicators, World Bank; recession data are from Economic Cycle Research Institute (ECRI).

7. See Lucia Foster, Cheryl Grim, and John Haltiwanger (2016), "Reallocation in the Great Recession: Cleansing or Not?" *Journal of Labor Economics*, vol. 34 (S1, January), pp. S293–S331. For an analysis of the role of sectoral labor misallocation in accounting for the productivity slowdown in the United Kingdom, see Christina Patterson, Ayşegül Şahin, Giorgio Topa, and Giovanni L. Violante (2016), "Working Hard in the Wrong Place: A Mismatch-Based Explanation to the U.K. Productivity Puzzle," *European Economic Review*, vol. 84 (May), pp. 42–56.

8. See Patrick Moran and Albert Queralto (2017), "Innovation and the Productivity Growth Slowdown," unpublished paper, May, https://sites.google.com/site/albertqueralto/home/research---albert-queralto/MQ_May2017.pdf.

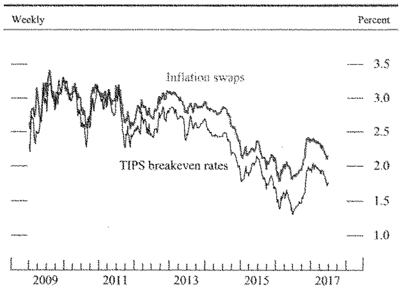
10. Median inflation expectations



NOTE: The Michigan survey data are monthly. The SPF data for inflation expectations for personal consumption expenditures are quarterly and extend from 2007:Q1 through 2017:Q2.

SOURCE: University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, Survey of Professional Forecasters (SPF).

11. 5-to-10-year-forward inflation compensation



NOTE: The data are weekly averages of daily data and extend through June 30, 2017. TIPS is Treasury Inflation-Protected Securities.

SOURCE: Federal Reserve Bank of New York; Barclays; Federal Reserve Board staff estimates.

Survey-based measures of inflation expectations are little changed this year . . .

Expectations of inflation likely influence actual inflation by affecting wage- and price-setting decisions. Survey-based measures of inflation expectations at medium- and longer-term horizons have remained relatively stable so far in 2017. In the second-quarter Survey of Professional Forecasters conducted by the Federal Reserve Bank of Philadelphia, the median expectation for the annual rate of increase in the PCE price index over the next 10 years was 2.1 percent, the same as in the first quarter and little changed from the readings during 2016 (figure 10). In the University of Michigan Surveys of Consumers, the median value for inflation expectations over the next 5 to 10 years—which has been drifting downward for the past few years—has held about flat at a low level since late last year.

. . . while market-based measures of inflation compensation fell back somewhat

Inflation expectations can also be gauged by market-based measures of inflation compensation, though the inference is not straightforward because inflation compensation can be importantly affected by changes in premiums associated with risk and liquidity. Measures of longer-term inflation compensation—derived either from differences between yields on nominal Treasury securities and those on comparable Treasury Inflation-Protected Securities (TIPS) or from inflation swaps—have fallen back somewhat this year after having moved up in late 2016 (figure 11).[2] The TIPS-based measure of

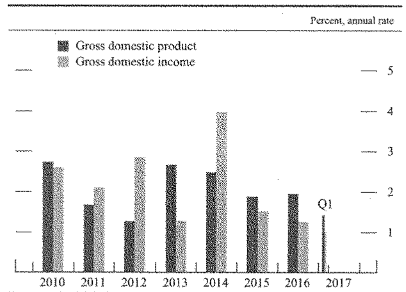
2. Inflation compensation implied by the TIPS breakeven inflation rate is based on the difference, at comparable maturities, between yields on nominal Treasury securities and yields on TIPS, which are indexed to the headline consumer price index (CPI). Inflation swaps are contracts in which one party makes payments of certain fixed nominal amounts in exchange for cash flows that are indexed to cumulative CPI inflation over

5-to-10-year-forward inflation compensation is now 1¾ percent, and the analogous measure of inflation swaps is now about 2 percent. Both measures are well below the 2½ to 3 percent range that persisted for most of the 10 years before 2014.

Real gross domestic product growth slowed in the first quarter, but spending by households and businesses appears to have picked up in recent months

After having moved up at an annual rate of 2¾ percent in the second half of 2016, real gross domestic product (GDP) is reported to have increased about 1½ percent in the first quarter of this year (figure 12).[3] The step-down in first-quarter growth was largely attributable to soft inventory investment and a lull in the growth of consumer spending; in contrast, net exports increased a bit, residential investment grew robustly, and spending by businesses surged. Indeed, business investment was strong enough that overall private domestic final purchases—that is, final purchases by U.S. households and businesses, which tend to carry more signal for future GDP growth than most other components of overall spending—moved up at an annual rate of about 3 percent in the first quarter. For more recent months, indicators of spending by consumers and businesses have been strong and suggest that growth of economic activity rebounded in the second quarter; thus, overall activity appears to have expanded moderately, on average, over the first half of the year.

12. Change in real gross domestic product and gross domestic income

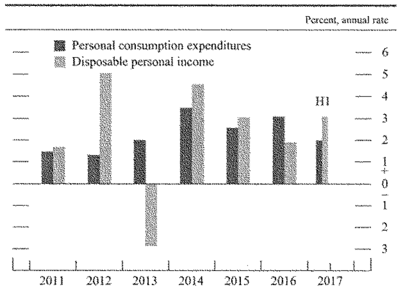


SOURCE: Department of Commerce, Bureau of Economic Analysis.

some horizon. Focusing on inflation compensation 5 to 10 years ahead is useful, particularly for monetary policy, because such forward measures encompass market participants' views about where inflation will settle in the long term after developments influencing inflation in the short term have run their course.

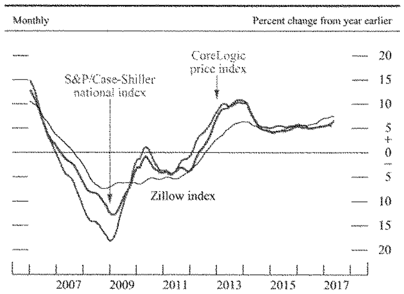
3. Real gross domestic income (GDI), which is conceptually the same as GDP but is constructed from different source data, had been rising at roughly the same rate as real GDP for most of 2016. However, real GDI was held down by the very weak reading for personal income in the fourth quarter of last year, which may prove to have been transitory.

13. Change in real personal consumption expenditures and disposable personal income



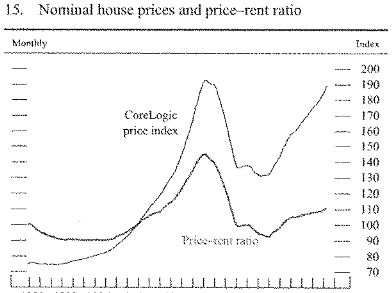
NOTE: The values for 2017:H1 are the annualized May/Q4 changes.
SOURCE: Department of Commerce, Bureau of Economic Analysis.

14. Prices of existing single-family houses



NOTE: The data for the S&P/Case-Shiller index extend through April 2017. The data for the CoreLogic and Zillow indexes extend through May 2017.
SOURCE: CoreLogic Home Price Index; Zillow; S&P/Case-Shiller U.S. National Home Price Index. The S&P/Case-Shiller Index is a product of S&P Dow Jones Indices LLC and/or its affiliates. (For Dow Jones Indices licensing information, see the note on the Contents page.)

15. Nominal house prices and price–rent ratio



NOTE: The data extend through May 2017. The CoreLogic price index is seasonally adjusted by Federal Reserve Board staff. The price–rent ratio is the ratio of nominal house prices to the consumer price index of rent of primary residence. The data are indexed to 100 in January 2000.
SOURCE: For prices, CoreLogic; for rents, Department of Labor, Bureau of Labor Statistics.

The economic expansion continues to be supported by accommodative financial conditions, including the low cost of borrowing and easy access to credit for many households and businesses, continuing job gains, rising household wealth, and favorable consumer and business sentiment.

Gains in income and wealth continue to support consumer spending . . .

After increasing strongly in the second half of 2016, consumer spending in the first quarter of this year was tepid. Unseasonably warm weather depressed spending on energy services, and purchases of motor vehicles slowed from an unusually high pace late last year. However, household spending seems to have picked up in more recent months, as purchases of energy services returned to seasonal norms and retail sales firmed. All told, consumer spending increased at an annual rate of 2 percent over the first five months of this year, only a bit slower than in the past couple of years (figure 13).

Beyond spending, other indicators of consumers' economic well-being have been strong in the aggregate. The ongoing improvement in the labor market has supported further gains in real disposable personal income (DPI), a measure of income after accounting for taxes and adjusting for inflation. Real DPI increased at a solid annual rate of 3 percent over the first five months of this year.

Gains in the stock market and in house prices over the first half of the year have boosted household net wealth. Broad measures of U.S. equity prices have continued to increase in recent months after moving up considerably late last year and in the first quarter. House prices have also continued to climb, adding to the balance sheet strength of homeowners (figure 14). Indeed, nominal house price indexes are close to their peaks of the mid-2000s. However, while the ratio of house prices to rents has edged higher, it remains well below its previous peak (figure 15). As a result of the increases in home and equity prices, aggregate household net worth has risen appreciably. In fact, at the end of the first quarter of 2017, household net worth was more than six times the value of disposable income, the highest-ever reading for that ratio (figure 16).

Consumer spending has also been supported by low burdens from debt service payments. The household debt service burden—the ratio of required principal and interest payments on outstanding household debt to disposable income, measured for the household sector as a whole—has remained at a very low level by historical standards. As interest rates rise, the debt burden will move up only gradually, as most household debt is in fixed-interest products.

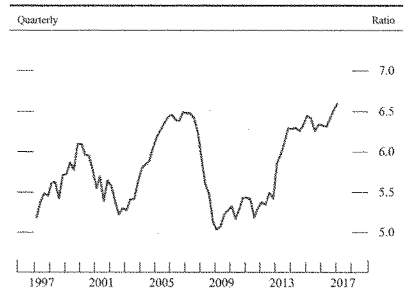
. . . as does credit availability

Consumer credit has continued to expand this year but more moderately than in 2016 (figure 17). Financing conditions are generally favorable, with auto and student loans remaining widely available and outstanding balances continuing to expand at a robust, albeit somewhat reduced, pace. Even though delinquency rates on most types of consumer debt have remained low by historical standards, credit card and auto loan delinquencies among subprime borrowers have drifted up some. Possibly in response to this deteriorating credit performance, banks have tightened standards for credit cards and auto lending. Mortgage credit has remained readily available for households with solid credit profiles, but it was still difficult to access for households with low credit scores or harder-to-document incomes.

Consumer confidence is strong

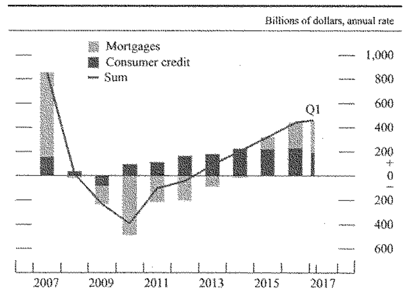
Consumers have remained optimistic about their financial situation. As measured by the Michigan survey, consumer sentiment was solid through most of 2016, likely reflecting rising income and job gains. Sentiment moved up appreciably after the presidential election last November and has remained at a high level so far this year (figure 18). Furthermore,

16. Wealth-to-income ratio



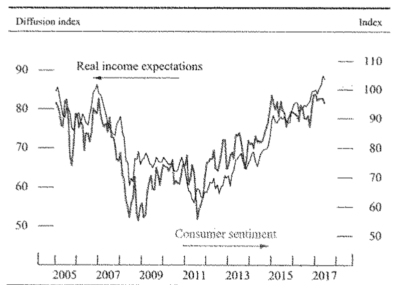
NOTE: The series is the ratio of household net worth to disposable personal income.
SOURCE: For net worth, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; for income, Department of Commerce, Bureau of Economic Analysis.

17. Changes in household debt



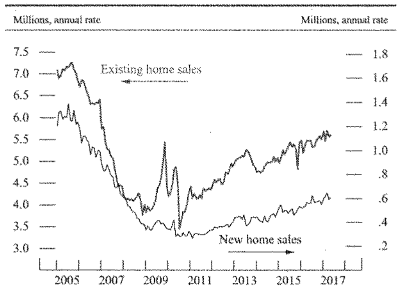
NOTE: Changes are calculated from year-end to year-end except 2017 changes, which are calculated from Q1 to Q1.
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

18. Indexes of consumer sentiment and income expectations



NOTE: The consumer sentiment data are monthly and are indexed to 100 in 1966. The real income expectations data are calculated as the net percentage of survey respondents expecting family income to go up more than prices during the next year or two plus 100 and are shown as a three-month moving average.
SOURCE: University of Michigan Surveys of Consumers.

19. New and existing home sales

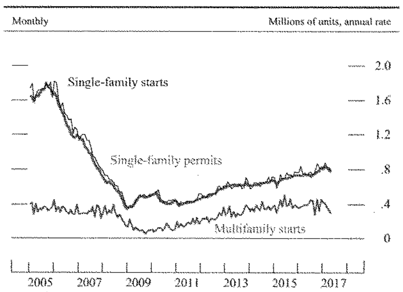


NOTE: The data extend through May 2017. New home sales includes only single-family sales. Existing home sales includes single-family, condo, townhome, and co-op sales.
SOURCE: For new home sales, Census Bureau; for existing home sales, National Association of Realtors.

20. Mortgage rates and housing affordability

NOTE: The housing affordability index data are monthly through April 2017, and the mortgage rate data are weekly through July 6, 2017. At an index value of 100, a median-income family has exactly enough income to qualify for a median-priced home mortgage. Housing affordability is seasonally adjusted by Board staff.
SOURCE: For housing affordability index, National Association of Realtors; for mortgage rates, Freddie Mac Primary Mortgage Market Survey.

21. Private housing starts and permits



NOTE: The data extend through May 2017.
SOURCE: Department of Commerce, Bureau of the Census.

the share of households expecting real income to rise over the next year or two has gone up markedly in the past few months and is now in line with its pre-recession level.

Activity in the housing sector has improved modestly

Several indicators of housing activity have continued to strengthen gradually this year. Sales of existing homes have gained, on net, while house prices have continued to rise and mortgage rates have remained low, even though they are up from last year (figures 19 and 20). In addition, single-family housing starts registered a slight increase, on average, in the first five months of the year, although multifamily housing starts have slipped (figure 21). Despite the modest increase in construction activity, the months' supply of homes for sale has remained near the low levels seen in 2016, and the aggregate vacancy rate has fallen back to levels observed in the mid-2000s. Lean inventories are likely to support further gains in homebuilding activity going forward.

Business investment has turned up after a period of weakness . . .

Led by a surge in spending on drilling and mining structures, real outlays for business investment—that is, private nonresidential fixed investment—rose robustly at the beginning of the year after having been about flat for 2016 as a whole (figure 22). The sharp gains in drilling and mining in the first quarter mark a turnaround for the sector; energy-sector investment had declined noticeably following the drop in oil prices that began in mid-2014 and ran through early 2016. More recently, rapid increases in the number of drilling rigs in operation suggest that investment in this area remained strong in the second quarter of this year.

Moreover, business spending on equipment and intangibles (such as research and development) advanced solidly at the beginning of the year after having been roughly flat in 2016. Furthermore, indicators of business spending are generally upbeat: Orders and shipments of capital goods have posted net gains in recent months, and indexes of business sentiment and activity remain elevated after having improved significantly late last year.

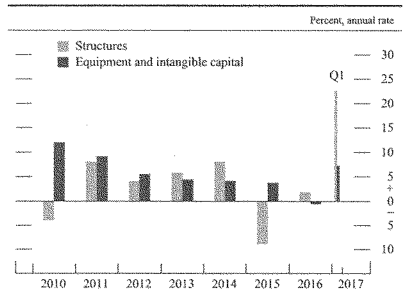
. . . while corporate financing conditions have remained accommodative

Aggregate flows of credit to large nonfinancial firms have remained solid, supported in part by continued low interest rates (figure 23). The gross issuance of corporate bonds was robust during the first half of 2017, and yields on both speculative- and investment-grade corporate bonds remained low by historical standards (figure 24). Gross equity issuance by nonfinancial firms stayed solid, on average, as seasoned equity offerings continued at a robust pace and the pace of initial public offerings picked up from the low levels seen in 2016.

Despite the pickup in business investment, demand for business loans was subdued early this year, and outstanding commercial and industrial (C&I) loans on banks' books contracted in the first quarter. In the April Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS), banks reported a broad-based decline in demand for C&I loans during the first quarter of 2017 even as lending standards on such loans were reported to be basically unchanged.[4] Banks also reported weaker demand for commercial real estate loans as well as a continued tightening of standards on such loans. However, lending to large nonfinancial firms appeared to be strengthening somewhat during the second quarter. Meanwhile, measures of small business credit demand remained weak amid stable supply.

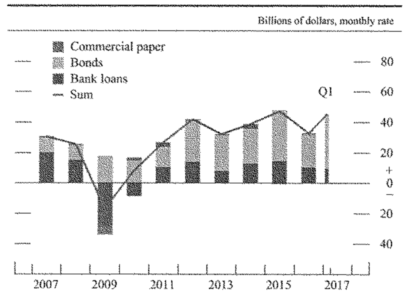
4. The SLOOS is available on the Board's website at https://www.federalreserve.gov/data/sloos/sloos.htm.

22. Change in real private nonresidential fixed investment



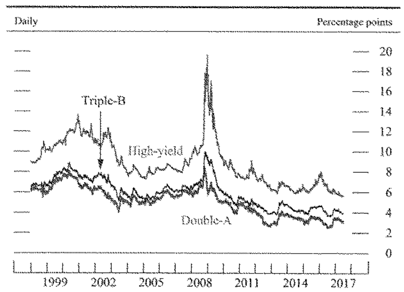
SOURCE: Department of Commerce, Bureau of Economic Analysis.

23. Selected components of net debt financing for nonfinancial businesses



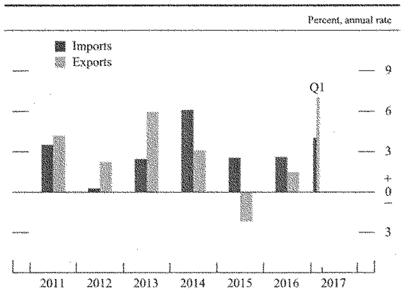
SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

24. Corporate bond yields, by securities rating



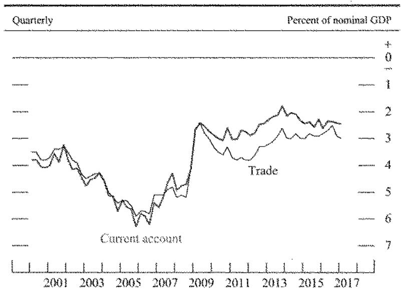
NOTE: The yields shown are yields on 10-year bonds.
SOURCE: BofA Merrill Lynch Global Research, used with permission.

25. Change in real imports and exports of goods and services



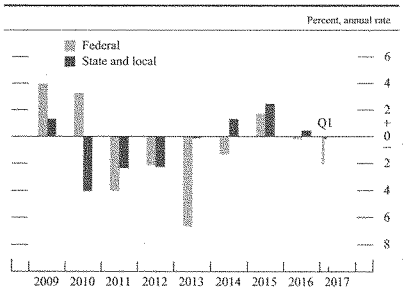
SOURCE: Department of Commerce, Bureau of Economic Analysis.

26. U.S. trade and current account balances



NOTE: GDP is gross domestic product.
SOURCE: Department of Commerce, Bureau of Economic Analysis.

27. Change in real government expenditures on consumption and investment



SOURCE: Department of Commerce, Bureau of Economic Analysis.

U.S. exports grew at a faster pace

In the first quarter of 2017, U.S. real exports increased briskly and broadly following moderate growth in the second half of last year that was driven by a surge in agricultural exports (figure 25). At the same time, real import growth declined somewhat from its strong pace in the second half of last year. As a result, real net exports contributed slightly to U.S. real GDP growth in the first quarter. Available trade data through May suggest that the growth of real exports slowed to a modest pace in the second quarter. Nevertheless, the average pace of export growth appears to have stepped up in the first half of 2017 compared with last year, partly reflecting stronger growth abroad and a diminishing drag from earlier dollar appreciation. All told, the available data for the first half of this year suggest that net exports added a touch to U.S. real GDP growth and that the nominal trade deficit widened slightly relative to GDP (figure 26).

Federal fiscal policy had a roughly neutral effect on economic growth . . .

Federal purchases moved sideways in 2016, and policy actions had little effect on federal taxes or transfers (figure 27). Under currently enacted legislation, federal fiscal policy will likely again have a roughly neutral influence on the growth in real GDP this year.

After narrowing significantly for several years, the federal unified deficit has widened from about 2½ percent of GDP in fiscal year 2015 to 3¼ percent currently. Although expenditures as a share of GDP have been relatively stable over this period at a little under 21 percent, receipts moved lower in 2016 and have edged down further so far this year to roughly 17½ percent of GDP (figure 28). The ratio of federal debt held by the public to nominal GDP is quite elevated relative to historical norms. Nevertheless, the deficit remains small enough to roughly stabilize this ratio in the neighborhood of 75 percent (figure 29).

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. . . and the fiscal position of most state and local governments is stable

The fiscal position of most state and local governments is stable, although there is a range of experiences across these governments. Many state governments are experiencing lackluster revenue growth, as income tax collections have been only edging up, on average, in recent quarters. In contrast, house price gains have continued to push up property tax revenues at the local level. Employment growth in the state and local government sector has been anemic so far this year following a pace of hiring in 2016 that was the strongest since 2008. Outlays for construction by these governments have been declining (figure 30).

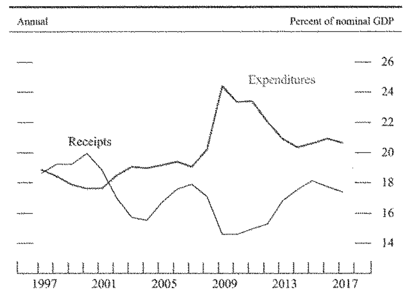
Financial Developments

The expected path for the federal funds rate flattened

The path for the expected federal funds rate implied by market quotes on interest rate derivatives has flattened, on net, since the end of December, moving higher for 2017 but slightly lower further out (figure 31). The expected policy path moved up at the beginning of the year, reportedly reflecting investor perceptions that expansionary fiscal policy would likely be forthcoming over the near term, but subsequently fell amid some waning of these expectations as well as FOMC communications that were interpreted as signaling a somewhat slower pace of policy rate increases than had been anticipated.

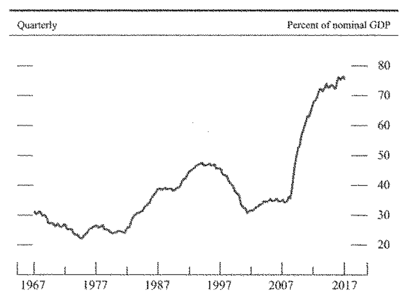
Survey-based measures of the expected path of policy also moved up for 2017. Most of the respondents to the Federal Reserve Bank of New York's Survey of Primary Dealers and Survey of Market Participants—which were conducted just before the June FOMC meeting—projected an additional 25 basis point increase in the FOMC's target range for the federal funds rate, relative to what they projected in surveys conducted before the December FOMC meeting, as the most likely outcome for this year.

28. Federal receipts and expenditures



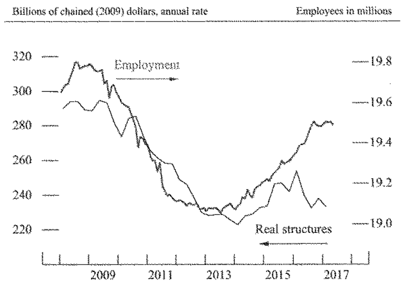
Note: Through 2016, receipts and expenditures are for fiscal years (October to September); gross domestic product (GDP) is for the four quarters ending in Q3. For 2017, receipts and expenditures are for the 12 months ending in May, and GDP is the average of 2016:Q4 and 2017:Q1. Receipts and expenditures are on a unified-budget basis.
Source: Office of Management and Budget.

29. Federal government debt held by the public



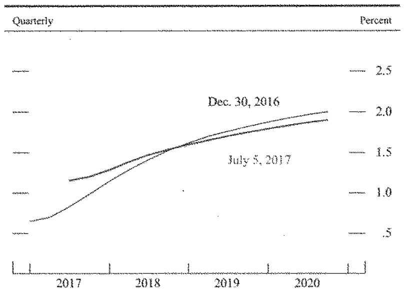
Note: The data for gross domestic product (GDP) are at an annual rate. Federal debt held by the public equals federal debt less Treasury securities held in federal employee defined benefit retirement accounts, evaluated at the end of the quarter.
Source: For GDP, Department of Commerce, Bureau of Economic Analysis; for federal debt, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

30. State and local employment and structures investment



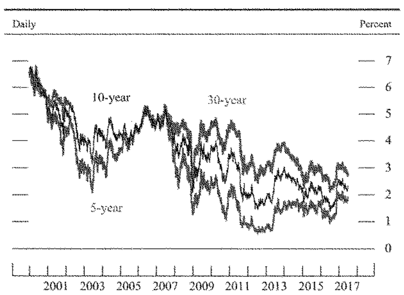
NOTE: The employment data are monthly and extend through May 2017, and the structures data are quarterly.
SOURCE: For employment data, Department of Labor, Bureau of Labor Statistics; for structures data, Department of Commerce, Bureau of Economic Analysis.

31. Market-implied federal funds rate



NOTE: The federal funds rate path is implied by quotes on overnight index swaps—a derivative contract tied to the effective federal funds rate. The implied path as of July 5, 2017, is compared with that as of December 30, 2016. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The data extend through 2020:Q4.
SOURCE: Bloomberg; Federal Reserve Board staff estimates.

32. Yields on nominal Treasury securities



NOTE: The Treasury ceased publication of the 30-year constant maturity series on February 18, 2002, and resumed that series on February 9, 2006.
SOURCE: Department of the Treasury.

Expectations for the number of rate hikes in 2018 were about unchanged. Market-based measures of uncertainty about the policy rate approximately one to two years ahead decreased slightly, on balance, from their year-end levels.

Longer-term nominal Treasury yields remain low

After rising significantly during the second half of 2016, yields on medium- and longer-term nominal Treasury securities have decreased 5 to 25 basis points, on net, so far in 2017 (figure 32). The decrease in longer-term nominal yields since the beginning of the year largely reflects declines in inflation compensation due in part to soft incoming data on inflation, with real yields little changed on net. Consistent with the changes in Treasury yields, yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest rates—decreased slightly over the first half of the year (figure 33). Treasury and MBS yields picked up somewhat in late June, driven in part by increases in government yields overseas. However, yields remain quite low by historical standards.

Broad equity price indexes increased further . . .

Broad U.S. equity indexes continued to increase during the period (figure 34). Equity prices were reportedly supported by lower interest rates and increased optimism that corporate earnings will continue to strengthen this year. Stock prices of companies in the technology sector increased notably on net. After rising significantly toward the end of last year, stock prices of banks performed about in line with the broader market during the first half of 2017. The implied volatility of the S&P 500 index one month ahead—the VIX—decreased, on net, ending the period close to the bottom of its historical range. (For a discussion of financial stability issues, see the box "Developments Related to Financial Stability.")

. . . and risk spreads on corporate bonds decreased

Bond spreads for investment- and speculative-grade firms decreased, and spreads for speculative-grade firms now stand near the bottom of their historical ranges.

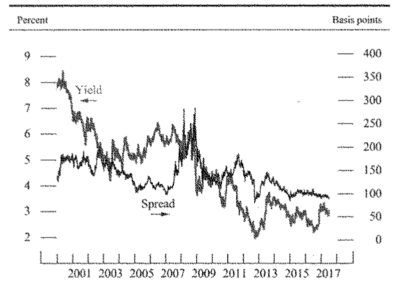
Treasury and mortgage securities markets have functioned well

Available indicators of Treasury market functioning remained stable over the first half of 2017. A variety of liquidity metrics—including bid-ask spreads, bid sizes, and estimates of transaction costs—either improved or remained unchanged over the period, displaying no notable signs of liquidity pressures. The agency MBS market also continued to function well. (For a detailed discussion of corporate bond market functioning, see the box "Recent Developments in Corporate Bond Market Liquidity.")

Money market rates have moved up in line with increases in the FOMC's target range

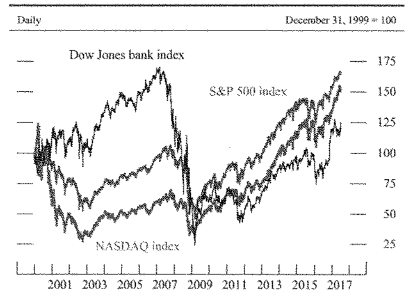
Conditions in domestic short-term funding markets have remained stable so far in 2017. Yields on a broad set of money market instruments moved higher in response to the FOMC's policy actions in March and June. The effective federal funds rate generally traded near the middle of the target range and was closely tracked by the overnight Eurodollar rate. The spread between the three-month LIBOR (London interbank offered rate) and the OIS (overnight index swap) rate has returned to historical norms over the first half of 2017, declining from the elevated levels that prevailed at the end of last year around the implementation of the Securities and Exchange Commission money market fund reform.

33. Yield and spread on agency mortgage-backed securities



NOTE: The data are daily. Yield shown is for the Fannie Mae 30-year current coupon, the coupon rate at which new mortgage-backed securities would be priced at par, or face, value. Spread shown is to the average of the 5- and 10-year nominal Treasury yields.
SOURCE: Department of the Treasury; Barclays.

34. Equity prices



SOURCE: Standard & Poor's Dow Jones Indices and NASDAQ index via Bloomberg. (For Dow Jones Indices licensing information, see the note on the Contents page.)

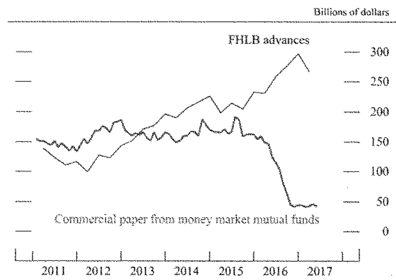
Developments Related to Financial Stability

Vulnerabilities in the U.S. financial system remain moderate on balance. Capital and liquidity ratios at most large U.S. banks continue to be at historical highs, and reliance on short-term wholesale funding at these institutions has continued to decline. Valuation pressures across a range of assets and several indicators of investor risk appetite have increased further since mid-February, but apparent high risk appetite in asset markets has not led to increased borrowing in the nonfinancial sector. Debt owed by nonfinancial corporations remains elevated, although it has been flat or falling in the past two years. Household debt as a share of gross domestic product has remained subdued, and new borrowing has been driven primarily by households with strong credit histories.

The strong capital position of the financial sector has contributed to the improved resilience of the U.S. financial system. Regulatory capital ratios at most bank holding companies have continued to be historically high, mainly as a result of the higher regulatory capital requirements. At the same time, measures of bank profitability have increased modestly on a year-on-year basis. Regulatory capital ratios at insurance companies are also high by historical standards.

Vulnerabilities stemming from maturity and liquidity transformation in the financial sector remain low. High-quality liquid asset holdings at all large domestic bank holding companies are above regulatory liquidity coverage ratio requirements. Moreover, banks have continued to replace short-term wholesale funding, such as commercial paper held by money market mutual funds (also referred to as money market funds, or MMFs), with relatively more stable core deposits. The use of Federal Home Loan Bank (FHLB) advances as a source of funding for the banks, which had increased notably through 2016, has fallen slightly in the first quarter of 2017 (figure A). The MMF reforms, designed by the Securities and Exchange Commission and fully implemented in October 2016, have led to a shift of about $1.2 trillion in assets from prime funds—which can hold a range of risky instruments, including commercial paper issued by banks—to government funds, which can hold only assets collateralized by Treasury and agency securities. This shift has reduced the risk of runs on MMFs. However, run risk could increase if investors shift out of MMFs into more

A. Selected funding for large banks



NOTE: Commercial paper from money market mutual fund data are monthly and extend through May 2017. Federal Home Loan Bank (FHLB) data are quarterly and are seasonally adjusted. FHLB advances data for different subsets of Comprehensive Capital Analysis and Review banks depending on their use of each funding source.

SOURCE: U.S. Securities and Exchange Commission, Form N-MFP, "Monthly Schedule of Portfolio Holdings of Money Market Funds," accessed via the Office of Financial Research; Federal Financial Institutions Examinations Council, Call Report Form FFIEC 031, "Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices."

opaque and fragile alternative vehicles. Thus, continued monitoring of this sector is important. The FHLBs have increased their issuance of short-maturity liabilities, mainly to government funds. However, the FHLBs have not reduced the maturity of their own assets, which increases their liquidity mismatch and potential vulnerability to funding strains. This mismatch has also been highlighted by the Federal Housing Finance Agency, which continues to evaluate ways to formalize its supervisory expectations regarding the appropriate amount of short-term funding of long-term assets by the FHLBs.[1]

Valuation pressures have increased further across a range of assets, including Treasury securities, equities, corporate bonds, and commercial real estate (CRE).

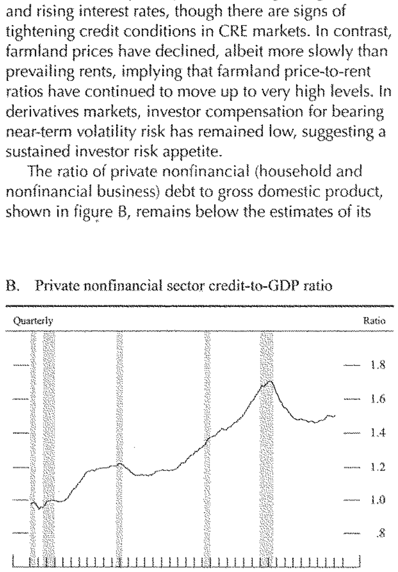
1. See Melvin L. Watt (2017), "Prepared Remarks," speech delivered at the 2017 Federal Home Loan Bank Directors' Conference, Washington, May 23, https://www.fhfa.gov/Media/PublicAffairs/Pages/Prepared-Remarks-of-Melvin-L-Watt-Director-of-FHFA-FHLBank-Directors-Conference.aspx.

Term premiums on Treasury securities continue to be in the lower part of their historical distribution. A sudden rise in term premiums to more normal levels poses a downside risk to long-maturity Treasury prices, which could in turn affect the prices of other assets. Forward equity price-to-earnings ratios rose a bit further and are now at their highest levels since the early 2000s, while a measure of the risk premium embedded in high-yield corporate bond spreads declined a touch from an already low level, implying high asset valuations in this market as well. Prices of CRE have continued to advance at a rapid clip amid slowing rent growth and rising interest rates, though there are signs of tightening credit conditions in CRE markets. In contrast, farmland prices have declined, albeit more slowly than prevailing rents, implying that farmland price-to-rent ratios have continued to move up to very high levels. In derivatives markets, investor compensation for bearing near-term volatility risk has remained low, suggesting a sustained investor risk appetite.

The ratio of private nonfinancial (household and nonfinancial business) debt to gross domestic product, shown in figure B, remains below the estimates of its long-term upward trend. The debt-to-income ratio of households has changed little over the past few years and remains at a relatively low level. Moreover, new borrowing is concentrated among borrowers with high credit scores. In contrast, the leverage of nonfinancial corporations continues to be notably elevated. New borrowing is concentrated among firms with stronger balance sheets, and the total outstanding amount of speculative-grade bonds and leveraged loans edged down, especially in the oil sector.

As part of its effort to reduce regulatory burden while promoting the financial stability of the United States, the Federal Reserve Board has taken two key steps since mid-February. First, member agencies of the Federal Financial Institutions Examination Council, including the Board, issued a joint report to the Congress under the Economic Growth and Regulatory Paperwork Reduction Act of 1996 detailing their review of regulations affecting smaller financial institutions, such as community banks, and describing burden-reducing actions the agencies plan to take.[2] Second, the Board and the Federal Deposit Insurance Corporation jointly announced the completion of their evaluation of the 2015 resolution plans of 16 domestic banks and separately issued resolution plan guidance to 4 foreign banks.[3] The agencies identified shortcomings in one domestic firm's resolution plan, which must be satisfactorily addressed in the firm's 2017 plan by December 31. For foreign banking organizations, resolution plans are focused on their U.S. operations, and guidance issued to these organizations reflects the significant restructuring they have undertaken to form intermediary holding companies.

B. Private nonfinancial sector credit-to-GDP ratio



NOTE: The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; Department of Commerce, Bureau of Economic Analysis, national income and product accounts (NIPA), Table 1.1.5: Gross Domestic Product; Board staff calculations.

2. See Board of Governors of the Federal Reserve System (2017), "Banking Agencies Issue Joint Report to Congress under the Economic Growth and Regulatory Paperwork Reduction Act of 1996," press release, March 21, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20170321a.htm.

3. See Board of Governors of the Federal Reserve System (2017), "Agencies Complete Resolution Plan Evaluation of 16 Domestic Firms; Provide Resolution Plan Guidance to Four Foreign Banking Organizations," press release, March 24, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20170324a.htm.

Recent Developments in Corporate Bond Market Liquidity

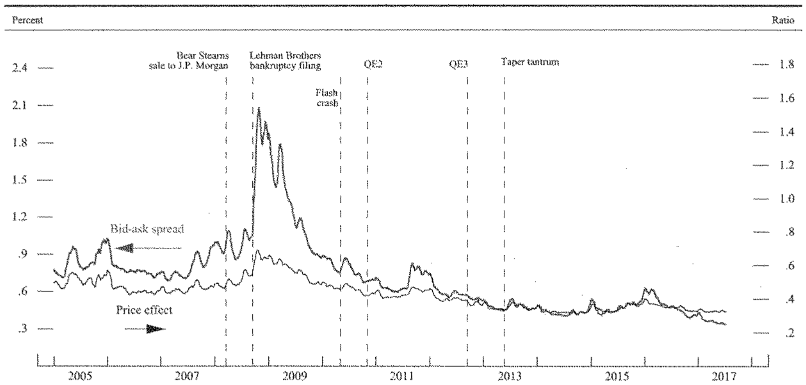
Market liquidity refers to the extent to which investors can rapidly execute sizable securities transactions at a low cost and with a limited price effect. A high degree of market liquidity facilitates informationally efficient market pricing and lowers the returns required by investors to hold financial assets; it therefore decreases the cost of valuable economic projects and so contributes to the efficient allocation of capital. Moreover, liquidity conditions that are resilient in the face of economic and financial shocks reduce the risk of excess volatility and fire sale losses, thus helping mitigate systemic risk.

Financial institutions that serve as "market makers," by posting prices and standing ready to buy or sell, are critical to healthy liquidity in the markets for certain assets, including corporate bonds. A series of changes, including regulatory reforms, since the Global Financial Crisis have likely altered financial institutions' incentives to provide liquidity, raising concerns about decreased liquidity in these markets, especially during periods of market stress. However, the available evidence does not point to any substantial impairment in liquidity in major financial markets in recent years. In addition, financial markets have generally performed well during recent episodes of financial stress.[1] Even in instances in which liquidity conditions in certain markets appear to have deteriorated, the effects have been mild and suggest limited economic consequences. In the remainder of this discussion, we illustrate these points with emphasis on the market for corporate bonds.

In recent years, market participants have been particularly concerned with liquidity conditions in the corporate bond market because the securities are traded less frequently, and the liquidity provision has relied more heavily on dealer intermediation, than in many other markets. However, a range of conventional metrics of liquidity indicate that liquidity strains in corporate bond markets have been minimal. Figure A

1. For a discussion of the behavior of bond prices during recent flash events (that is, extremely rapid and large price moves during very short periods), see Jerome H. Powell (2015), "Structure and Liquidity in Treasury Markets," speech delivered at the Brookings Institution, Washington, August 3, https://www.federalreserve.gov/newsevents/speech/powell20150803a.htm.

A. Mean bid-ask spread and market effect for corporate bonds



NOTE: The data are daily. The bid-ask spread is the 21-day moving average of the difference between trade size weighted-average dealer bid prices and ask prices of non-defaulted bonds on the secondary market, scaled by the midprice. Price effect data are the 21-day moving average of the Amihud (2002) measure (see footnote 2), which is defined as the daily average of the ratio of the absolute value of the percentage price changes to transaction volume for non-defaulted bonds on the secondary market that traded at least 10 times between 10:30 a.m. and 3:30 p.m. Excludes 144a bonds.

SOURCE: FINRA Trade Reporting and Compliance Engine; Thomson Reuters SDC Platinum; Mergent Fixed Income Securities Database; Moody's Default and Recovery Database.

shows that the estimated mean effective bid-ask spread for U.S. corporate bonds has remained low in recent years. Before the financial crisis, bid-ask spreads averaged about 1 percent of the price of the bond. This measure of trading costs skyrocketed during the financial crisis but has returned to the range seen before the crisis. Measures of the effect of trades on prices follow a similar pattern and have been fairly stable in recent years.[2] In addition, other measures related to factors associated with market liquidity, such as trends in average trade size and turnover, also suggest market liquidity conditions are benign.[3]

That said, some recent work suggests that these traditional measures of transaction costs might exaggerate the degree of liquidity in part because dealers have increasingly shifted from acting as principals to acting as agents to reduce their risk exposure, resulting in tighter bid-ask spreads.[4] Indeed, many market participants have expressed a concern that declines in dealer inventories may reflect in part a reduced willingness or capacity of the primary dealers to make markets, which may in turn lead to lower liquidity.

Figure B shows that primary dealers' inventories of corporate bonds (including foreign bonds issued in the United States), which are predominantly used for market making, indeed began to decline sharply following the Bear Stearns collapse in March 2008 and fell further after Lehman Brothers failed in October 2008. Such a sharp decline in dealer inventories may be the result of dealers' actions on their own, reflecting changes in risk preferences in reaction to the financial crisis. In addition, changing

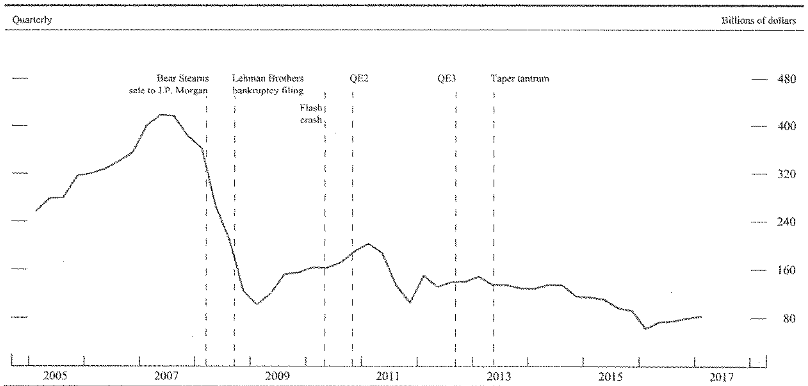
(continued on next page)

2. See Yakov Amihud (2002), "Illiquidity and Stock Returns: Cross-Section and Time-Series Effects," *Journal of Financial Markets*, vol. 5 (January), pp. 31–56. The Amihud price effect measure is defined as the ratio of the percentage change in price (in absolute value) and the daily trading volume.

3. For detailed definitions of trade size and turnover in the context of corporate bond markets, see Francesco Trebbi and Kairong Xiao (2015), "Regulation and Market Liquidity," NBER Working Paper Series 21739 (Cambridge, Mass.: National Bureau of Economic Research, November).

4. See Jaewon Choi and Yesol Huh (2016), "Customer Liquidity Provision: Implications for Corporate Bond Transaction Costs," unpublished paper, July (revised January 2017), https://sites.google.com/site/yesolhuh/research/Choi_Huh_CLP.pdf. The authors suggest that transactions in which dealers act simply as brokers (that is, agents), rather than as intermediaries that hold assets on their balance sheets (principals), could reflect price concessions that dealers make to entice counterparties into the other side of a trade so that the dealers will not need to hold the traded assets.

B. Broker-dealer holdings of corporate and foreign bonds



Source: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States," L.130 Security Brokers and Dealers, June 8, 2017.

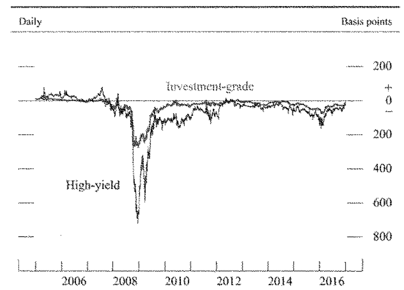
Recent Developments in Corporate Bond Market Liquidity *(continued)*

regulations—such as the Volcker rule and the supplementary leverage ratio, which aimed to make the financial system safer and sounder—and changes in technology may have contributed to the continued trend of lower dealer inventories.[5]

The factors affecting a dealer's willingness or capacity to facilitate trading may also affect other activities such as arbitrage trading, which equates prices for financing arrangements with economically similar risks. Therefore, impediments in arbitrage may also indicate market illiquidity. One widely studied no-arbitrage relationship is the so-called CDS–bond basis, the difference between bonds' credit default swap (CDS) spreads and bond-implied credit spreads.[6] Figure C shows that the CDS–bond basis for corporate bonds was close to zero before the crisis, widened dramatically during the crisis (indicating a significant unrealized arbitrage opportunity), and has returned to a level closer to, but still below, zero in recent years. More recently, the CDS–bond basis has narrowed further.

Overall, the degree to which dealer balance sheet constraints affect corporate bond market liquidity depends not only on dealers' capacity and willingness to provide liquidity, but also on the extent to which nonbank financial institutions such as hedge funds, mutual funds, and insurance companies fill any lost market-making capacity. Other factors such as changes in technology, risk preferences, and investor composition also interact to shape the trading

C. CDS (credit default swap)–bond basis



Note: Data extend through December 30, 2016. The figure plots the CDS–bond basis for investment-grade and high-yield bonds. The CDS–bond basis is from J.P. Morgan and is computed for investment-grade and high-yield corporate bonds as the average difference between each bond's market CDS spread (interpolated to the bond maturity) and the theoretical CDS spread implied by the bond yield. See Boyarchenko and others (2016) in footnote 6 for details.

Source: J.P. Morgan, CDS Data. (For additional information about the data from J.P. Morgan, see the note on the Contents page.)

environment.[7] There are indications that market structure has changed in recent years, and trades in certain situations and market segments might have been more costly at times. But markets have also adjusted, and some measures of dislocation have lessened with these adjustments. In summary, liquidity conditions have been quite good overall since the Global Financial Crisis. The sharp deterioration of market liquidity during 2007 and 2008 illustrates clearly that the most significant risk has been distress at financial institutions. Any modest potential effects of regulation on liquidity should be balanced with the gains to resilience at large financial institutions associated with regulation.

5. See Tobias Adrian, Nina Boyarchenko, and Or Shachar (forthcoming), "Dealer Balance Sheets and Bond Liquidity Provision," *Journal of Monetary Economics*. They find that dealers subject to stricter regulations after the crisis are less able to intermediate customer trades in the corporate bond market. Also see Jack Bao, Maureen O'Hara, and Alex Zhou (2016), "The Volcker Rule and Market-Making in Times of Stress," Finance and Economics Discussion Series 2016-102 (Washington: Board of Governors of the Federal Reserve System, December), https://www.federalreserve.gov/econresdata/feds/2016/files/2016102pap.pdf. They show that recently downgraded bonds trade with a higher price effect after the introduction of the Volcker rule, although Anderson and Stulz find no such effects. See Mike Anderson and René M. Stulz (2017), "Is Post-Crisis Bond Liquidity Lower?" NBER Working Paper Series 23317 (Cambridge, Mass.: National Bureau of Economic Research, April).

6. For a more detailed discussion of the CDS–bond basis, see Nina Boyarchenko, Pooja Gupta, Nick Steele, and Jacqueline Yen (2016), "Trends in Credit Market Arbitrage," Staff Report 784 (New York: Federal Reserve Bank of New York, July; revised July 2016), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr784.pdf.

7. See Darrell Duffie (2012), "Market Making under the Proposed Volcker Rule," Working Paper 3118 (Stanford, Calif.: Stanford Graduate School of Business, January), available at https://www.gsb.stanford.edu/faculty-research/working-papers/market-making-under-proposed-volcker-rule. He argues that the negative effect the Volcker rule may have on market liquidity in the short run may disappear in the long run as nonbanks step in to provide liquidity. See also Hendrik Bessembinder, Stacey E. Jacobsen, William F. Maxwell, and Kumar Venkataraman (2016), "Capital Commitment and Illiquidity in Corporate Bonds," unpublished paper, March, http://finance.bus.utk.edu/UTSMC/documents/BillMaxwellPapertopresent042016.pdf. The authors find that bank dealers are less willing to provide liquidity now than in the recent past, while nonbank dealers are now more willing.

Bank credit continued to expand, though at a slower pace than in 2016, and bank profitability improved

Aggregate credit provided by commercial banks continued to increase through the first quarter of 2017, though at a slower pace than in 2016, leaving the ratio of total commercial bank credit to nominal GDP slightly lower (figure 35). The expansion of core loans slowed during 2017, consistent with banks' reports in the April SLOOS of weakened demand for most loan categories and tighter lending standards for commercial real estate loans. However, the growth of core loans appeared to be picking up somewhat during the second quarter. Measures of bank profitability have continued to improve so far this year but remained below their historical averages (figure 36).

Credit conditions in municipal bond markets have generally been stable

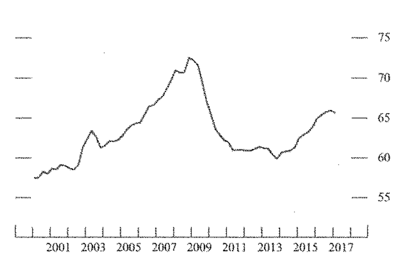
Credit conditions in municipal bond markets have generally remained stable since year-end. Over that period, yield spreads on 20-year general obligation municipal bonds over comparable-maturity Treasury securities were little changed on balance. Puerto Rico filed to enter a court-supervised process to restructure its debt after it failed to reach an agreement with bondholders, and several credit rating agencies downgraded the bond ratings of the state of Illinois. However, these events have had no noticeable effect on broader municipal bond markets.

International Developments

Foreign financial market conditions eased

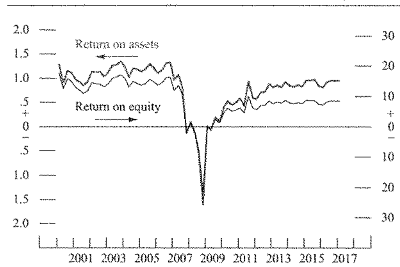
Financial market conditions in both the advanced foreign economies (AFEs) and the emerging market economies (EMEs) have generally eased since January. Better-than-expected data releases, robust corporate earnings, and the passage of risk events—such as national elections in some European countries—boosted investor confidence. Broad

35. Ratio of total commercial bank credit to nominal gross domestic product



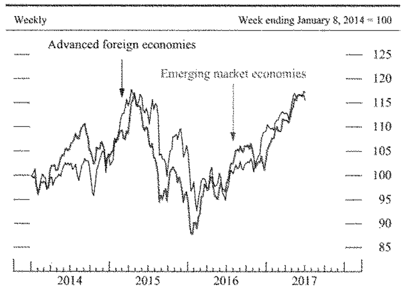
SOURCE: Federal Reserve Board, Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States"; Department of Commerce, Bureau of Economic Analysis.

36. Profitability of bank holding companies



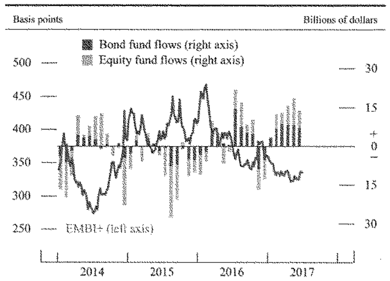
NOTE: The data are quarterly and are seasonally adjusted.
SOURCE: Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Bank Holding Companies.

37. Equity indexes for selected foreign economies



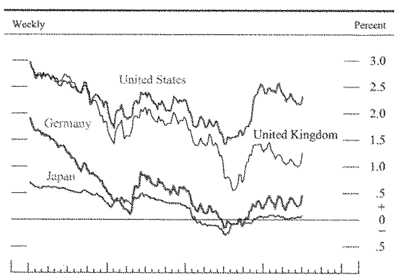
NOTE: The data are weekly averages of daily data and extend through July 5, 2017.
SOURCE: For advanced foreign economies, MSCI EAFE Index via Thomson Reuters Eikon with Datastream for Office; for emerging market economies, MSCI Emerging Markets Index via Thomson Reuters Eikon with Datastream for Office.

38. Emerging market mutual fund flows and spreads



NOTE: The EMBI+ data are weekly averages of daily data and extend through July 5, 2017. The EPFR data are monthly sums of weekly data. The fund flows data exclude funds located in China.
SOURCE: For bond and equity fund flows, EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

39. Nominal 10-year government bond yields in selected advanced economies



NOTE: The data are weekly averages of daily benchmark yields and extend through July 5, 2017.
SOURCE: Bloomberg.

equity indexes in advanced and emerging foreign economies rose further (figure 37). In addition, spreads of emerging market sovereign bonds over U.S. Treasury securities narrowed, and capital flows into emerging market mutual funds picked up (figure 38). Government bond yields in the AFEs generally remained very low, partly reflecting investor expectations that substantial monetary policy accommodation would be required for some time (figure 39). In the United Kingdom, softer macroeconomic data and uncertainty about future policies and growth as the country begins the process of exiting the European Union also weighed on yields. However, AFE government bond yields picked up somewhat in late June, partly reflecting investors' focus on remarks by officials from some AFE central banks suggesting possible shifts toward less accommodative policy stances. In the euro area, bank supervisors intervened to prevent the disorderly failure of a few small to medium-sized lenders in Italy and Spain; business disruptions were minimal, and spillovers to other European banks were limited.

The dollar depreciated somewhat

Since the start of the year, the broad dollar index—a measure of the trade-weighted value of the dollar against foreign currencies—has depreciated about 5 percent, on balance, after rising more than 20 percent between mid-2014 and late 2016 (figure 40). The weakening since the start of the year partly reflected growing uncertainty about prospects for more expansionary U.S. fiscal policy as well as mounting confidence in the foreign economic outlook. The euro rose against the dollar following the French presidential election, and the Mexican peso appreciated substantially as the Mexican central bank tightened monetary policy and as investor concerns about the potential for substantial disruptions of U.S.–Mexico trade appeared to ease.

Economic activity in the AFEs grew at a solid pace

In the first quarter, real GDP grew at a solid pace in Canada, the euro area, and Japan, partly reflecting robust growth in fixed investment in all three economies (figure 41). In contrast, economic growth slowed to a tepid pace in the United Kingdom, reflecting weaker consumption growth and a decline in exports. In most AFEs, economic survey indicators, such as purchasing manager surveys, generally remained consistent with continued economic growth at a solid pace during the second quarter.

Inflation leveled off in most AFEs . . .

In late 2016, consumer price inflation (measured as a 12-month percent change) rose substantially in most AFEs, partly reflecting increases in energy prices (figure 42). Since then, inflation has leveled off in Japan and declined somewhat in the euro area as upward pressure from energy prices eased, core inflation stayed low, and wage growth was subdued even as unemployment rates declined further in both economies. In contrast, in the United Kingdom, headline inflation rose well above the Bank of England's (BOE) 2 percent target, largely reflecting upward pressure from the substantial sterling depreciation since the Brexit referendum in June 2016.

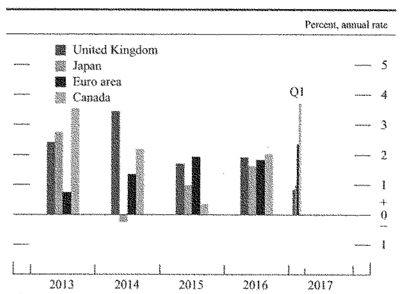
. . . and AFE central banks maintained highly accommodative monetary policies

AFE central banks kept their policy rates at historically low levels, and the Bank of Japan kept its target range for 10-year government bond yields near zero. The European Central Bank (ECB) maintained its asset purchase program, though it slightly reduced the pace of purchases, and the BOE completed the bond purchase program it announced last August. However, the Bank of Canada, BOE, and ECB have recently suggested that if growth continues to reduce resource slack, some policy accommodation could be withdrawn. The ECB remarked that the forces

40. U.S. dollar exchange rate indexes

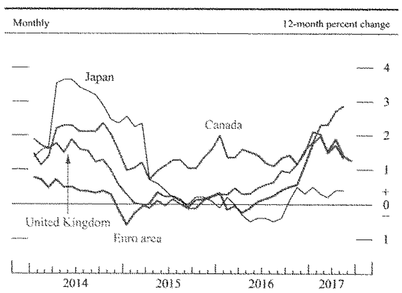
NOTE: The data, which are in foreign currency units per dollar, are weekly averages of daily data and extend through July 5, 2017.
SOURCE: Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

41. Real gross domestic product growth in selected advanced foreign economies



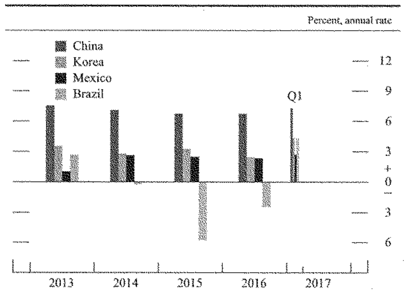
SOURCE: For the United Kingdom, Office for National Statistics; for Japan, Cabinet Office, Government of Japan; for the euro area, Eurostat; for Canada, Statistics Canada; all via Haver Analytics.

42. Inflation in selected advanced foreign economies



NOTE: The data for the euro area incorporate the flash estimate for June 2017. The data for Canada, Japan, and the United Kingdom extend through May 2017.
SOURCE: For the United Kingdom, Office for National Statistics; for Japan, Ministry of Internal Affairs and Communications; for the euro area, Statistical Office of the European Communities; for Canada, Statistics Canada; all via Haver Analytics.

43. Real gross domestic product growth in selected emerging market economies



NOTE: The data for China are seasonally adjusted by Board staff. The data for Korea, Mexico, and Brazil are seasonally adjusted by their respective government agencies.

SOURCE: For China, China National Bureau of Statistics; for Korea, Bank of Korea; for Mexico, Instituto Nacional de Estadística y Geografía; for Brazil, Instituto Brasileiro de Geografia e Estatística; all via Haver Analytics.

holding down inflation could be temporary. The BOE indicated that some monetary accommodation might need to be removed if the tradeoff between supporting employment and expediting the return of inflation to its target is reduced.

In EMEs, Asian growth was solid . . .

Chinese economic activity was robust in the first quarter of 2017 as a result of solid domestic and external demand (figure 43). More recent indicators suggest that growth moderated in the second quarter as Chinese authorities tightened financial conditions and as export growth slowed. In some other emerging Asian economies, growth picked up in early 2017 as a result of stronger external demand and manufacturing activity. However, growth of the region's exports, especially to China, slowed so far in the second quarter.

. . . and many Latin American economies continue their tepid recovery

In Mexico, growth decelerated a touch in the first quarter of 2017, partly reflecting a slowdown in private consumption following sharp hikes in domestic fuel prices. These price hikes, together with the effects of earlier peso depreciation on import prices, contributed to a sharp rise in Mexican inflation, which prompted the Bank of Mexico to further tighten monetary policy. Following a prolonged period of contraction, the Brazilian economy posted solid growth in the first quarter of 2017, partly reflecting a surge in exports and a strong harvest. However, domestic demand has remained very weak amid high unemployment and heightened political tensions, and indicators of economic activity have stepped down recently. In Brazil and some other South American economies, declining inflation has led central banks to reduce their policy interest rates.

Part 2
Monetary Policy

The Federal Open Market Committee raised the federal funds rate target range in March and June

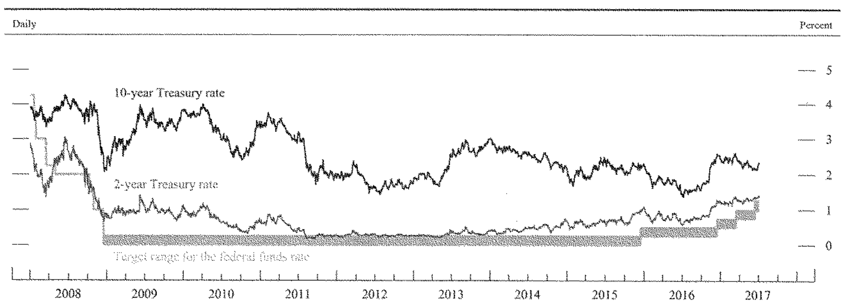
Over the past year and a half, the Federal Open Market Committee (FOMC) has been gradually increasing its target range for the federal funds rate as the economy continued to make progress toward the Committee's objectives of maximum employment and price stability. After having raised the target range for the federal funds rate last December, the Committee decided to raise the target range again in March and in June, bringing it to 1 to 1¼ percent (figure 44).[5] The FOMC's decisions reflected the progress the economy has made, and is expected to make, toward the Committee's objectives.

When the Committee met in March, it decided to raise the target range for the federal funds rate to ¾ to 1 percent. Available information suggested that the labor market had continued to strengthen even as growth in economic activity slowed during the first quarter. Inflation measured on a 12-month basis had moved up appreciably and was close to the Committee's 2 percent longer-run objective. Core inflation, which excludes volatile energy and food prices, continued to run somewhat below 2 percent.

The data available at the time of the June FOMC meeting suggested a rebound in economic activity in the second quarter, leaving the projected average pace of growth over the first half of the year at a moderate level. The labor market had continued to strengthen, with the unemployment rate falling nearly ½ percentage point since the beginning of the year to 4.3 percent in May, a low level by historical standards and modestly below the median of FOMC participants' estimates of its longer-run normal level. Inflation measured on a 12-month basis had declined over the previous few months but was still up significantly since last summer. Like the headline inflation measure, core inflation was running somewhat below 2 percent. With employment expected to remain near its maximum sustainable level, the Committee continued to expect that inflation would move up and stabilize around 2 percent over the next couple of years, in line with the Committee's

5. See Board of Governors of the Federal Reserve System (2017), "Federal Reserve Issues FOMC Statement," press release, March 15, https://www.federalreserve.gov/newsevents/pressreleases/monetary20170315a.htm; and Board of Governors of the Federal Reserve System (2017), "Federal Reserve Issues FOMC Statement," press release, June 14, https://www.federalreserve.gov/newsevents/pressreleases/monetary20170614a.htm.

44. Selected interest rates



Note: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.
Source: Department of the Treasury; Federal Reserve Board.

longer-run objective. In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target another ¼ percentage point to a range of 1 to 1¼ percent.

Monetary policy continues to support economic growth

Even with the gradual reductions in the amount of policy accommodation to date, the Committee judges that the stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation. In particular, the federal funds rate appears to remain somewhat below its neutral level—that is, the level of the federal funds rate that is neither expansionary nor contractionary.

In evaluating the stance of monetary policy, policymakers routinely consult prescriptions from a variety of policy rules, which can serve as useful benchmarks. However, the use and interpretation of such prescriptions require careful judgments about the choice and measurement of the inputs to these rules as well as the implications of the many considerations these rules do not take into account (see the box "Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process").

Future changes in the federal funds rate will depend on the economic outlook as informed by incoming data

The FOMC has continued to emphasize that, in determining the timing and size of future adjustments to the target range for the federal funds rate, it will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal.

The Committee currently expects that the ongoing strength in the economy will warrant gradual increases in the federal funds rate, and that the federal funds rate will likely remain, for some time, below the levels that the Committee expects to prevail in the longer run. Consistent with this outlook, in the most recent Summary of Economic Projections, which was compiled at the time of the June FOMC meeting, most FOMC participants projected that the appropriate level of the federal funds rate would be below its longer-run level through 2018.[6]

The size of the Federal Reserve's balance sheet has remained stable so far this year

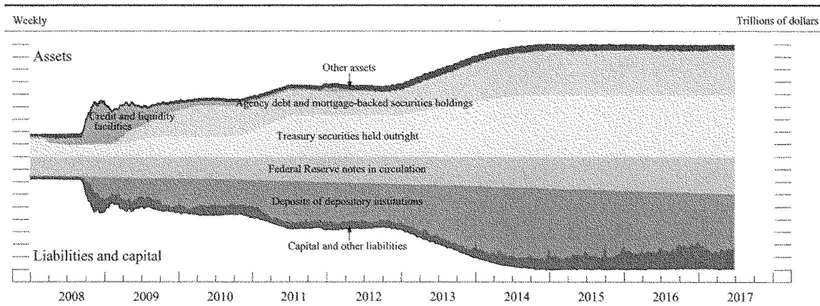
To help maintain accommodative financial conditions, the Committee has continued its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and rolling over maturing Treasury securities at auction. Consequently, the Federal Reserve's total assets have held steady at around $4.5 trillion, with holdings of U.S. Treasury securities at $2.5 trillion and holdings of agency debt and agency mortgage-backed securities at approximately $1.8 trillion (figure 45). Total liabilities on the Federal Reserve's balance sheet were also mostly unchanged over the first half of 2017.

The Committee intends to implement a balance sheet normalization program

In June, policymakers augmented the Committee's Policy Normalization Principles and Plans issued in September 2014 by providing additional details regarding the approach the FOMC intends to use to reduce

6. See the June 2017 Summary of Economic Projections, which appeared as an addendum to the minutes of the June 13–14, 2017, meeting of the Federal Open Market Committee and is included as Part 3 of this report.

45. Federal Reserve assets and liabilities



NOTE: "Credit and liquidity facilities" consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns, and AIG; and other credit facilities, including the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, and the Term Asset-Backed Securities Loan Facility. "Other assets" includes unamortized premiums and discounts on securities held outright. "Capital and other liabilities" includes reverse repurchase agreements, the U.S. Treasury General Account, and the U.S. Treasury Supplementary Financing Account. The data extend through June 28, 2017.

SOURCE: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

the Federal Reserve's holdings of Treasury and agency securities once normalization of the federal funds rate is well under way.[7] The Committee intends to gradually reduce the Federal Reserve's securities holdings by decreasing its reinvestment of the principal payments it receives from the securities held in the System Open Market Account. Specifically, such payments will be reinvested only to the extent that they exceed gradually rising caps. Initially, these caps will be set at relatively low levels to limit the volume of securities that private investors will have to absorb. The Committee currently expects that, provided the economy evolves broadly as anticipated, it would likely begin to implement the program this year. In addition, the Committee affirmed that changing the target range for the federal funds rate remains its primary means of adjusting the stance of monetary policy (see the box "Addendum to the Policy Normalization Principles and Plans").

7. See Board of Governors of the Federal Reserve System (2017), "FOMC Issues Addendum to the Policy Normalization Principles and Plans," press release, June 14, https://www.federalreserve.gov/newsevents/pressreleases/monetary20170614c.htm.

The Federal Reserve's implementation of monetary policy has continued smoothly

The Federal Reserve successfully raised the effective federal funds rate in March and June of 2017 by increasing the interest rate paid on reserve balances along with the interest rate offered on overnight reverse repurchase agreements (ON RRPs). Specifically, the Federal Reserve increased the interest rate paid on required and excess reserve balances to 1.00 percent in March and 1.25 percent in June while increasing the ON RRP offering rate to 0.75 percent in March and 1.00 percent in June. In addition, the Board of Governors approved ¼ percentage point increases in the discount rate (the primary credit rate) in March and June. In both March and June, the effective federal funds rate rose near the middle of its new target range amid orderly trading conditions in money markets, closely tracked by most other overnight money market rates.

Usage of the ON RRP facility, which had increased late last year as a result of higher demand by government money market funds in the wake of last October's money fund reform, has declined some, on average, in recent months. However, usage has remained somewhat above its levels of one year ago.

Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process

What are monetary policy rules?

Monetary policy rules are formulas that prescribe a tight link between a small number of economic variables—typically including the gap between actual and target inflation along with an estimate of resource slack in the economy—and the setting of a policy rate, such as the federal funds rate.[1] While policy rules can provide helpful guidance for policymakers, their interpretation requires careful judgment about the measurement of the inputs to these rules and the implications of the many considerations these rules do not take into account.

Policy rules can incorporate key principles of good monetary policy. One key principle is that monetary policy should respond in a predictable way to changes in economic conditions. A second key principle is that monetary policy should be accommodative when inflation is below the desired level and employment is below its maximum sustainable level; conversely, monetary policy should be restrictive when the opposite holds. A third key principle is that, to stabilize inflation, the policy rate should be adjusted by more than one-for-one in response to persistent increases or decreases in inflation.

Economists have analyzed many monetary policy rules, including the well-known Taylor (1993) rule as well as other rules discussed later: the "balanced approach" rule, the "adjusted Taylor (1993)" rule, the "change" rule, and the "first difference" rule (figure A).[2] These policy rules generally embody the three key principles of good monetary policy noted earlier. Each rule takes into account two gaps—the difference between inflation and its objective (2 percent as measured by the price index for personal consumption expenditures (PCE), in the case of the Federal Reserve) as well as the difference between the rate of unemployment in the longer run (u^{LR}) and the current unemployment rate.[3] Unlike the other rules, the first-difference rule considers the change in the unemployment gap rather than its level.

The Taylor (1993), balanced-approach, and adjusted Taylor (1993) rules provide prescriptions for the *level* of the federal funds rate and require an estimate of the neutral real interest rate in the longer run (r^{LR})—that is, the level of the real federal funds rate that is expected to be consistent with sustaining maximum employment and stable inflation in the longer run.[4] In contrast, the change and first-difference rules prescribe how the level of the federal funds rate at a given time should be altered from its previous level—that is, they indicate how the existing rate should *change* over time. The adjusted Taylor (1993) rule recognizes that the federal funds rate cannot be reduced materially below zero, implying that interest rate policy alone may not be able to provide enough policy accommodation during periods when the unadjusted Taylor (1993) rule prescribes setting the federal funds rate below zero. To make up for the cumulative shortfall in accommodation (Z_t), the adjusted rule prescribes only a gradual return of the policy rate to the (positive) levels prescribed by the unadjusted Taylor (1993) rule as the economy recovers.

The small number of variables involved in policy rules makes them easy to use. However, the U.S.

1. There is a lengthy academic and intellectual debate about using rules to guide monetary policy; prominent examples of rules heavily discussed in the literature and influential on policymaking in earlier periods include the gold standard and Milton Friedman's constant money growth rule.

2. The Taylor (1993) rule was first suggested in John B. Taylor (1993), "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (December), pp. 195–214. The balanced-approach rule was analyzed in John B. Taylor (1999), "A Historical Analysis of Monetary Policy Rules," in John B. Taylor, ed., *Monetary Policy Rules* (Chicago: University of Chicago Press), pp. 319–41. The adjusted Taylor (1993) rule was studied in David Reifschneider and John C. Williams (2000), "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit, and Banking*, vol. 32 (November), pp. 936–66. The change rule was discussed in John B. Taylor (1999), "The Robustness and Efficiency of Monetary Policy Rules as Guidelines for Interest Rate Setting by the European Central Bank," *Journal of Monetary Economics*, vol. 43 (June), pp. 655–79. Finally, the first-difference rule was introduced by Athanasios Orphanides (2003), "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983–1022. A comprehensive review of policy rules is in John B. Taylor and John C. Williams (2011), "Simple and Robust Rules for Monetary Policy," in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, vol. 3B (Amsterdam: North-Holland), pp. 829–59. The same volume of the *Handbook of Monetary Economics* also discusses approaches other than policy rules for deriving policy rate prescriptions.

3. The Taylor (1993) rule represented slack in resource utilization using an output gap (the difference between the current level of real gross domestic product (GDP) and what GDP would be if the economy was operating at maximum employment). The rules in figure A represent slack in resource utilization using the unemployment gap instead, because that gap better captures the Federal Open Market Committee's statutory goal to promote maximum employment. Movements in these alternative measures of resource utilization are highly correlated. For more information, see the note below figure A.

4. Taylor-type rules—including John Taylor's original rule—have often been estimated assuming that the value of the neutral real interest rate in the longer run, r^{LR}, is equal to 2 percent, which roughly corresponds to the average historical value of the real federal funds rate before the financial crisis.

A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Taylor (1993) rule, adjusted	$R_t^{T93adj} = maximum\ \{R_t^{T93} - Z_t,\ 0\}$
Change rule	$R_t^{C} = R_{t-1} + 1.2(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
First-difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

NOTE: R_t^{T93}, R_t^{BA}, R_t^{T93adj}, R_t^{C}, and R_t^{FD} represent the values of the nominal federal funds rate prescribed by the Taylor (1993), balanced-approach, adjusted Taylor (1993), change, and first-difference rules, respectively.

R_t denotes the actual nominal federal funds rate for quarter t, π_t is four-quarter price inflation for quarter t, and u_t is the unemployment rate in quarter t. r_t^{LR} is the level of the neutral real federal funds rate in the longer run that, on average, is expected to be consistent with sustaining maximum employment and inflation at its 2 percent longer-run objective, π^{LR}. u_t^{LR} is the rate of unemployment in the longer run. Z_t is the cumulative sum of past deviations of the federal funds rate from the prescriptions of the Taylor (1993) rule when that rule prescribes setting the federal funds rate below zero.

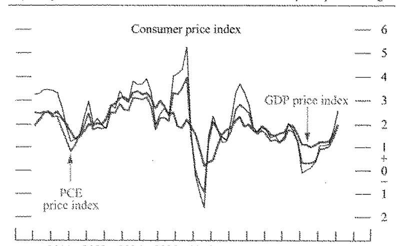
The Taylor (1993) rule and other policy rules are generally written in terms of the deviation of real output from its full capacity level. In these equations, the output gap has been replaced with the gap between the rate of unemployment in the longer run and its actual level (using a relationship known as Okun's law) in order to represent the rules in terms of the FOMC's statutory goals. Historically, movements in the output and unemployment gaps have been highly correlated. Footnote 2 provides references for the policy rules.

economy is highly complex, and these rules, by their very nature, do not capture that complexity. For example, while the unemployment rate is an important measure of the state of the labor market, it often lags business cycle developments and does not provide a complete measure of slack or tightness. In practice, Federal Open Market Committee (FOMC) policymakers examine a great deal of information about the labor market to gauge its health; this information includes broader measures of labor underutilization, the labor force participation rate, employment, hours worked, and the rates of job openings, hiring, layoffs, and quits, as well as anecdotal information not easily reduced to numerical indexes.[5]

Another issue related to the implementation of rules involves the measurement of the variables that drive the prescriptions generated by the rules. For example, there are many measures of inflation, and they do not always move together or by the same amount. The broadest measure of inflation, shown by the percent change in the gross domestic product price index, displays notable differences from measures that gauge changes in consumer prices (figure B). Even measures that focus

(continued on next page)

B. Inflation measures



SOURCE: Gross domestic product (GDP) and personal consumption expenditures (PCE) data are from the Bureau of Economic Analysis, Gross Domestic Product: Implicit Price Deflator (GDPDEF) and Personal Consumption Expenditures, retrieved from FRED, Federal Reserve Bank of St. Louis; consumer price index data are from the Department of Labor, Bureau of Labor Statistics.

5. For a discussion of these and other metrics of the labor market, see Hess Chung, Bruce Fallick, Christopher Nekarda, and David Ratner (2014), "Assessing the Change in Labor Market Conditions," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, May 22), https://www.federalreserve.gov/econresdata/notes/feds-notes/2014/assessing-the-change-in-labor-market-conditions-20140522.html.

Monetary Policy Rules and Their Role in the Federal Reserve's Policy Process *(continued)*

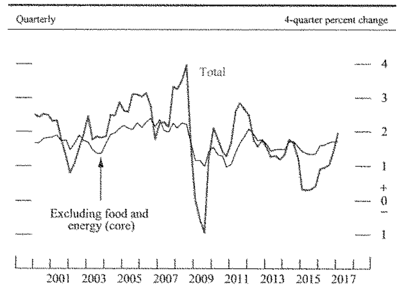
on the prices paid by consumers differ importantly. For example, inflation as measured by the consumer price index (or CPI) has generally been somewhat higher historically than inflation measured using the PCE price index (the index to which the FOMC's 2 percent longer-run inflation objective refers). Core inflation, meaning inflation excluding changes in food and energy prices, is less volatile than headline inflation and is often used in estimating monetary policy rules because it has historically been a good predictor of future headline inflation (figure C).

In addition, both the level of the neutral real interest rate in the longer run and the level of the unemployment rate that is sustainable in the longer run are difficult to estimate precisely, and estimates made in real time may differ substantially from estimates made later on, after the relevant economic data have been revised and additional data have become available.[6] For example, since 2000, respondents to the Blue Chip survey have markedly reduced their projections of the longer-run level of the real short-term interest rate (figure D). Survey respondents have also made considerable changes over time to their estimates of the rate of unemployment in the longer run, with consequences for the unemployment gap. Revisions of this magnitude to the neutral real interest rate and the rate of unemployment in the longer run can have important implications for the federal funds rate prescribed by monetary policy rules. Sensible estimation of policy rules requires that policymakers take into account these changes in the projected values of longer-run rates as they occur over time.

Furthermore, the prescribed responsiveness of the federal funds rate to its determinants differs across policy rules. For example, the sensitivity of the federal funds rate to the unemployment gap in the balanced-approach rule is twice as large as it is in the Taylor (1993) rule. The fact that the policy interest rate responds differently to the inflation and unemployment gaps in the different policy rules means that the rules provide different tradeoffs between stabilizing inflation and stabilizing unemployment.

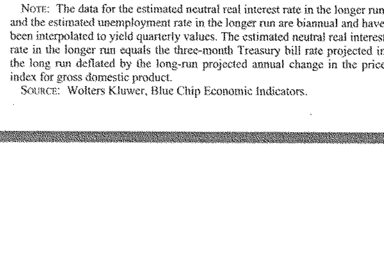
Finally, monetary policy rules do not take account of broader risk considerations. For example, policymakers routinely assess risks to financial stability. Furthermore, over the past few years, with the federal funds rate still close to zero, the FOMC has recognized that it would have limited scope to respond to an unexpected weakening in the economy by lowering short-term interest rates. This asymmetric risk has, in recent years, provided a sound rationale for following a more gradual path of rate increases than that prescribed by policy rules. (Asymmetric risk need not always provide a rationale for a more gradual path; if the risks were strongly tilted toward substantial and persistent overheating and too-high inflation, the asymmetric

C. Total inflation versus core inflation



SOURCE: Bureau of Economic Analysis.

D. Real-time estimates of the neutral real interest rate and the unemployment rate in the longer run



NOTE: The data for the estimated neutral real interest rate in the longer run and the estimated unemployment rate in the longer run are biannual and have been interpolated to yield quarterly values. The estimated neutral real interest rate in the longer run equals the three-month Treasury bill rate projected in the long run deflated by the long-run projected annual change in the price index for gross domestic product.

SOURCE: Wolters Kluwer, Blue Chip Economic Indicators.

6. The change and first-difference rules shown in figure A reduce the need for good estimates of longer-run rates because they do not require an estimate of the neutral real interest rate in the longer run. However, these rules have their own shortcomings. For example, research suggests that such rules will result in greater volatility in employment and inflation relative to what would be obtained under the Taylor (1993) and balanced-approach rules unless the estimates of the neutral real federal funds rate in the longer run and the rate of unemployment in the longer run are sufficiently far from their true values.

risk could argue for higher rates than prescribed by simple rules.)

How does the FOMC use monetary policy rules?

In the briefing materials prepared for FOMC meetings, Federal Reserve staff regularly report prescriptions for the current setting of the federal funds rate from a number of monetary policy rules.[7] FOMC policymakers discussed prescriptions from monetary policy rules as long ago as 1995 and have consulted them routinely since 2004. The materials that FOMC policymakers see also include forecasts of how the federal funds rate and key macro indicators would evolve, under each of the rules, several years into the future. Policymakers weigh this information, along with other information bearing on the economic outlook.[8]

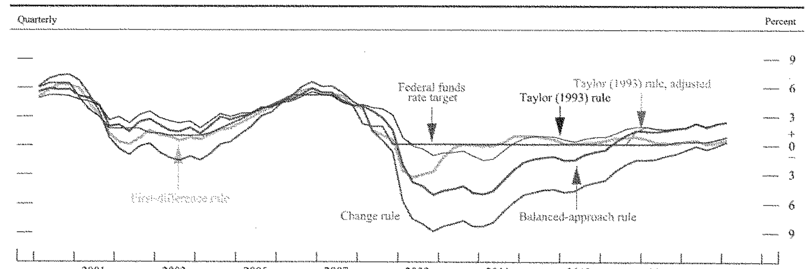
Different monetary policy rules often offer quite different prescriptions for the federal funds rate; moreover, there is no obvious metric for favoring one rule over another. While monetary policy rules often agree about the direction (up or down) in which policymakers should move the federal funds rate, they frequently disagree about the appropriate level of that rate. Historical prescriptions from policy rules differ from one another and also differ from the Committee's target for the federal funds rate, as shown in figure E. (These prescriptions are calculated using both the actual data and the estimates of the neutral real interest rate in the longer run and of the rate of unemployment in the longer run—data and estimates that were available to FOMC policymakers at the time.) Moreover, the rules sometimes prescribe setting short-term interest rates well below zero—a setting that is not feasible. With the exception of the adjusted Taylor (1993) rule, which imposes a lower limit of zero, all of the rules shown in figure E called for the federal funds rate to turn negative in 2009 and to stay below zero for several years thereafter. Thus, these rules indicated that the Federal Reserve should provide more monetary stimulus than could be achieved by setting the federal funds rate at zero. While all of the policy rules have called for higher values of the federal funds rate in recent years, the pace of tightening that the rules prescribe has varied widely. Prescriptions from these rules for the level of the federal funds rate in the first quarter of 2017 ranged from 37 basis points (change rule) to 2.5 percent (balanced-approach rule).[9]

7. Prescriptions from monetary policy rules are included in the Board staff's Tealbook (previously the Bluebook); the precise set of rules presented has changed from time to time. The transcripts and briefing materials for FOMC meetings through 2011 are available on the Board's website at https://www.federalreserve.gov/monetarypolicy/fomc_historical.htm. In the materials from 2011, the policy rule prescriptions are contained in the Monetary Policy Strategies section of Tealbook B.

8. The briefing materials that FOMC policymakers review regularly include the Board staff's baseline forecast for the economy and model simulations of a variety of alternative scenarios intended to provide a sense of the effects of other plausible developments that were not included in the staff's baseline forecast.

9. As noted earlier, the adjusted rule limits increases in the federal funds rate for a time during economic recoveries to make up for past shortfalls in accommodation caused by the zero lower limit on interest rates. This principle can also be applied to the prescriptions of the other rules. If applied to the balanced-approach rule, for example, it would have called for the federal funds rate to have remained at zero at least through the first quarter of 2017.

E. Historical federal funds rate prescriptions from simple policy rules



NOTE: The rules use real-time historical values of inflation, the federal funds rate, and the unemployment rate. Inflation is measured as the four-quarter percent change in the price index for personal consumption expenditures excluding food and energy. Quarterly projections of long-run values for the federal funds rate and the unemployment rate are derived through interpolations of biannual projections from Blue Chip Economic Indicators. The long-run value for inflation is taken as 2 percent.

SOURCE: Federal Reserve Bank of Philadelphia; Wolters Kluwer, Blue Chip Economic Indicators; Federal Reserve Board staff estimates.

Addendum to the Policy Normalization Principles and Plans

Adopted effective September 16, 2014; as amended effective June 14, 2017

All participants agreed to augment the Committee's Policy Normalization Principles and Plans by providing the following additional details regarding the approach the FOMC intends to use to reduce the Federal Reserve's holdings of Treasury and agency securities once normalization of the level of the federal funds rate is well under way.[1]

- The Committee intends to gradually reduce the Federal Reserve's securities holdings by decreasing its reinvestment of the principal payments it receives from securities held in the System Open Market Account. Specifically, such payments will be reinvested only to the extent that they exceed gradually rising caps.
  - For payments of principal that the Federal Reserve receives from maturing Treasury securities, the Committee anticipates that the cap will be $6 billion per month initially and will increase in steps of $6 billion at three-month intervals over 12 months until it reaches $30 billion per month.
  - For payments of principal that the Federal Reserve receives from its holdings of agency debt and mortgage-backed securities, the Committee anticipates that the cap will be $4 billion per month initially and will increase in steps of $4 billion at three-month intervals over 12 months until it reaches $20 billion per month.
  - The Committee also anticipates that the caps will remain in place once they reach their respective maximums so that the Federal Reserve's securities holdings will continue to decline in a gradual and predictable manner until the Committee judges that the Federal Reserve is holding no more securities than necessary to implement monetary policy efficiently and effectively.
- Gradually reducing the Federal Reserve's securities holdings will result in a declining supply of reserve balances. The Committee currently anticipates reducing the quantity of reserve balances, over time, to a level appreciably below that seen in recent years but larger than before the financial crisis; the level will reflect the banking system's demand for reserve balances and the Committee's decisions about how to implement monetary policy most efficiently and effectively in the future. The Committee expects to learn more about the underlying demand for reserves during the process of balance sheet normalization.
- The Committee affirms that changing the target range for the federal funds rate is its primary means of adjusting the stance of monetary policy. However, the Committee would be prepared to resume reinvestment of principal payments received on securities held by the Federal Reserve if a material deterioration in the economic outlook were to warrant a sizable reduction in the Committee's target for the federal funds rate. Moreover, the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate.

1. The Committee's Policy Normalization Principles and Plans were adopted on September 16, 2014, and are available at www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.pdf. On March 18, 2015, the Committee adopted an addendum to the Policy Normalization Principles and Plans, which is available at www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20150318.pdf.

PART 3
SUMMARY OF ECONOMIC PROJECTIONS

The following material appeared as an addendum to the minutes of the June 13–14, 2017, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on June 13–14, 2017, meeting participants submitted their projections of the most likely outcomes for real output growth, the unemployment rate, and inflation for each year from 2017 to 2019 and over the longer run.[8] Each participant's projection was based on information available at the time of the meeting, together with his or her assessment of appropriate monetary policy, including a path for the federal funds rate and its longer-run value, and assumptions about other factors likely to affect economic outcomes.[9] The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy.[10] "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the Federal Reserve's objectives of maximum employment and stable prices.

All participants who submitted longer-run projections expected that, under appropriate monetary policy, growth in real gross domestic product (GDP) this year would run somewhat above their individual estimates of its longer-run rate. Over half of these participants expected that economic growth would slow a bit in 2018, and almost all of them expected that in 2019 economic growth would run at or near its longer-run level. All participants who submitted longer-run projections expected that the unemployment rate would run below their estimates of its longer-run normal level in 2017 and remain below that level through 2019. The majority of participants also lowered their estimates of the longer-run normal rate of unemployment by 0.1 to 0.2 percentage point. All participants projected that inflation, as measured by the four-quarter percentage change in the price index for personal consumption expenditures (PCE), would run below 2 percent in 2017 and then step up in the next two years; over half of them projected that inflation would be at the Committee's 2 percent objective in 2019, and all judged that inflation would be within a couple of tenths of a percentage point of the objective in that year. Table 1 and figure 1 provide summary statistics for the projections.

As shown in figure 2, participants generally expected that evolving economic conditions would likely warrant further gradual increases in the federal funds rate to achieve and sustain maximum employment and 2 percent inflation. Although some participants raised or lowered their federal funds rate projections since March, the median projections for the federal funds rate in 2017 and 2018 were essentially unchanged, and the median projection in 2019 was slightly lower; the median projection for the longer-run federal funds rate was

8. Four members of the Board of Governors, one fewer than in March 2017, were in office at the time of the June 2017 meeting and submitted economic projections. The office of the president of the Federal Reserve Bank of Richmond was vacant at the time of this FOMC meeting; First Vice President Mark L. Mullinix submitted economic projections.

9. All participants submitted their projections in advance of the FOMC meeting; no projections were revised following the release of economic data on the morning of June 14.

10. One participant did not submit longer-run projections for real output growth, the unemployment rate, or the federal funds rate.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, June 2017

Percent

Variable	Median[1]				Central tendency[2]				Range[3]			
	2017	2018	2019	Longer run	2017	2018	2019	Longer run	2017	2018	2019	Longer run
Change in real GDP	2.2	2.1	1.9	1.8	2.1–2.2	1.8–2.2	1.8–2.0	1.8–2.0	2.0–2.5	1.7–2.3	1.4–2.3	1.5–2.2
March projection	2.1	2.1	1.9	1.8	2.0–2.2	1.8–2.3	1.8–2.0	1.8–2.0	1.7–2.3	1.7–2.4	1.5–2.2	1.6–2.2
Unemployment rate.......	4.3	4.2	4.2	4.6	4.2–4.3	4.0–4.3	4.1–4.4	4.5–4.8	4.1–4.5	3.9–4.5	3.8–4.5	4.5–5.0
March projection	4.5	4.5	4.5	4.7	4.5–4.6	4.3–4.6	4.3–4.7	4.7–5.0	4.4–4.7	4.2–4.7	4.1–4.8	4.5–5.0
PCE inflation............	1.6	2.0	2.0	2.0	1.6–1.7	1.8–2.0	2.0–2.1	2.0	1.5–1.8	1.7–2.1	1.8–2.2	2.0
March projection	1.9	2.0	2.0	2.0	1.8–2.0	1.9–2.0	2.0–2.1	2.0	1.7–2.1	1.8–2.1	1.8–2.2	2.0
Core PCE inflation[4].......	1.7	2.0	2.0		1.6–1.7	1.8–2.0	2.0–2.1		1.6–1.8	1.7–2.1	1.8–2.2	
March projection	1.9	2.0	2.0		1.8–1.9	1.9–2.0	2.0–2.1		1.7–2.0	1.8–2.1	1.8–2.2	
Memo: Projected appropriate policy path												
Federal funds rate	1.4	2.1	2.9	3.0	1.1–1.6	1.9–2.6	2.6–3.1	2.8–3.0	1.1–1.6	1.1–3.1	1.1–4.1	2.5–3.5
March projection	1.4	2.1	3.0	3.0	1.4–1.6	2.1–2.9	2.6–3.3	2.8–3.0	0.9–2.1	0.9–3.4	0.9–3.9	2.5–3.8

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The March projections were made in conjunction with the meeting of the Federal Open Market Committee on March 14–15, 2017. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the March 14–15, 2017, meeting, and one participant did not submit such projections in conjunction with the June 13–14, 2017, meeting.

1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.

2. The central tendency excludes the three highest and three lowest projections for each variable in each year.

3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

4. Longer-run projections for core PCE inflation are not collected.

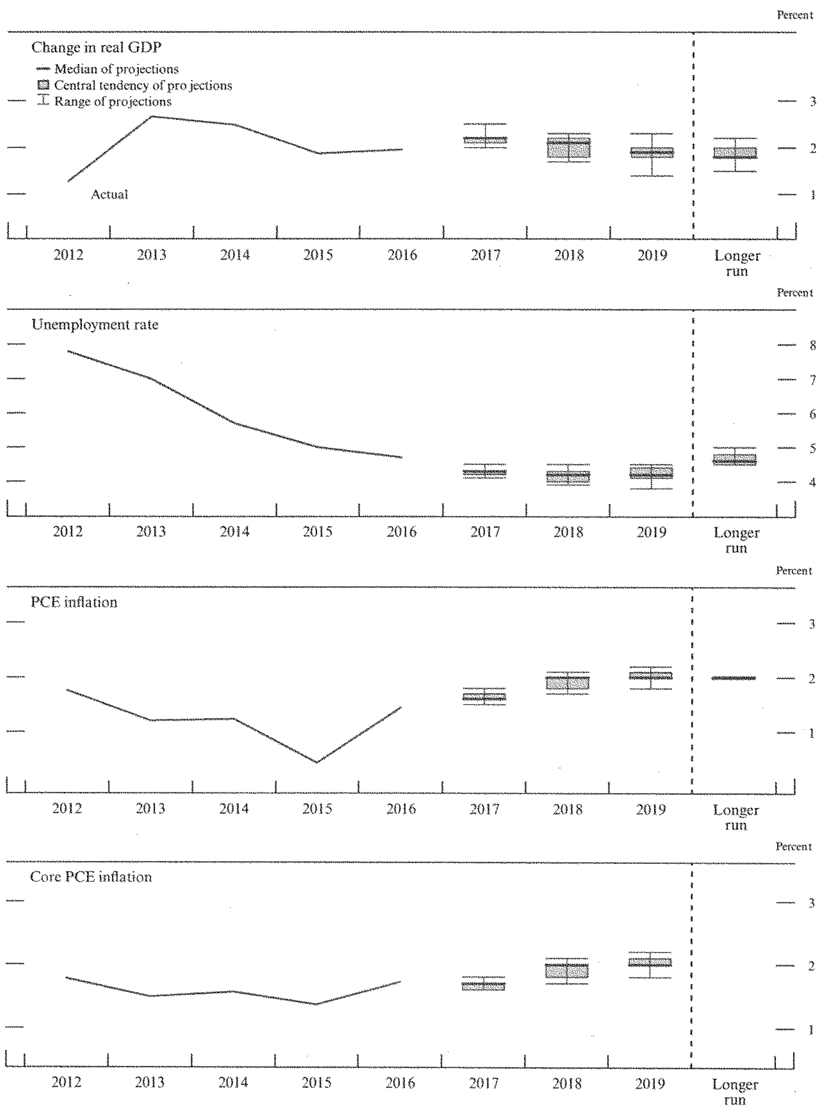
unchanged. However, the economic outlook is uncertain, and participants noted that their economic projections and assessments of appropriate monetary policy could change in response to incoming information.

In general, participants viewed the uncertainty attached to their projections as broadly similar to the average of the past 20 years, although a couple of participants saw the uncertainty associated with their real GDP growth forecasts as higher than average. Most participants judged the risks around their projections for economic growth, the unemployment rate, and inflation as broadly balanced.

Figures 4.A through 4.C for real GDP growth, the unemployment rate, and inflation, respectively, present "fan charts" as well as charts of participants' current assessments of the uncertainty and risks surrounding the economic projections. The fan charts (the panels at the top of these three figures) show the median projections surrounded by confidence intervals that are computed from the forecast errors of various private and government projections made over the past 20 years. The width of the confidence interval for each variable at a given point is a measure of forecast uncertainty at that horizon. For all three macroeconomic variables, these charts illustrate that forecast uncertainty is substantial and generally increases as the forecast horizon lengthens. Reflecting, in part, the uncertainty about the future evolution of GDP growth, the unemployment rate, and inflation, participants' assessments of appropriate monetary policy are also subject to considerable uncertainty. To illustrate the uncertainty regarding the appropriate path for monetary policy, figure 5 shows a comparable fan chart around the median projections for the federal funds rate.[11] As with the

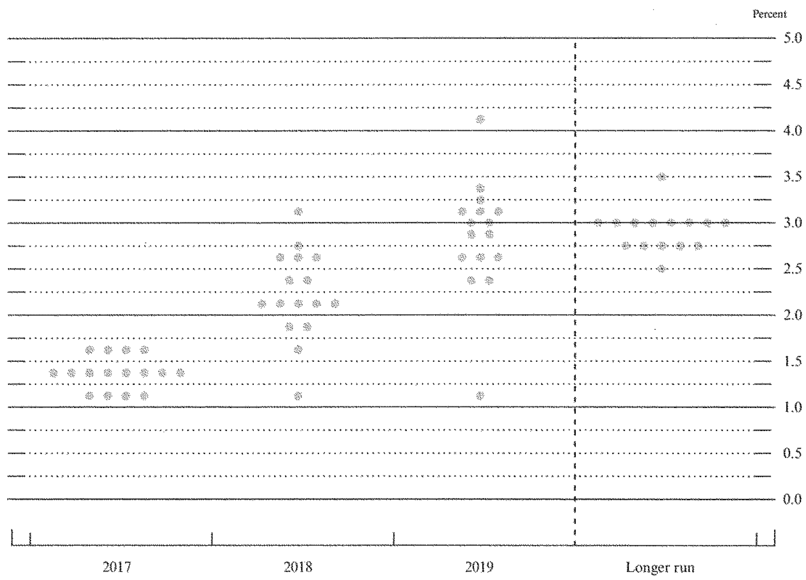
11. The fan chart for the federal funds rate depicts the uncertainty about the future path of appropriate monetary policy and is closely connected with the uncertainty about the future value of economic variables. In contrast, the dot plot shown in figure 2 displays the

Figure 1. Medians, central tendencies, and ranges of economic projections, 2017–19 and over the longer run



Note: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

macroeconomic variables, forecast uncertainty for the federal funds rate is substantial and increases at longer horizons.

The Outlook for Economic Activity

The median of participants' projections for the growth rate of real GDP, conditional on their individual assumptions about appropriate monetary policy, was 2.2 percent in 2017, 2.1 percent in 2018, and 1.9 percent in 2019; the median of projections for the longer-run normal rate of real GDP growth was 1.8 percent. Compared with the March Summary of Economic Projections (SEP), the medians of the forecasts for real GDP growth over the period from 2017 to 2019, as well as the median assessment of the longer-run growth rate, were mostly unchanged. Fewer than half of the participants incorporated expectations of fiscal stimulus into their projections, and a couple indicated that they had marked down the magnitude of expected fiscal stimulus relative to March.

All participants revised down their projections for the unemployment rate in the fourth quarter of 2017 and of 2018, and almost all also revised down their projections for the

dispersion of views across individual participants about the appropriate level of the federal funds rate.

unemployment rate in the fourth quarter of 2019. Many who did so cited recent lower-than-expected readings on unemployment. The median of the projections for the unemployment rate was 4.3 percent in 2017 and 4.2 percent in each of 2018 and 2019, 0.2 percentage point and 0.3 percentage point lower than in the March projections, respectively. The majority of participants also revised down their estimates of the longer-run normal rate of unemployment by 0.1 or 0.2 percentage point, and the median longer-run level was 4.6 percent, down 0.1 percentage point from March.

Figures 3.A and 3.B show the distributions of participants' projections for real GDP growth and the unemployment rate from 2017 to 2019 and in the longer run. The distribution of individual projections for real GDP growth for this year shifted up, with some participants now expecting real GDP growth between 2.4 and 2.5 percent and none seeing it below 2 percent. The distributions of projected real GDP growth in 2018, 2019, and in the longer run were broadly similar to the distributions of the March projections. The distributions of individual projections for the unemployment rate shifted down noticeably for 2017 and 2018. Most participants projected an unemployment rate of 4.2 or 4.3 percent at the end of this year, and the majority anticipated an unemployment rate between 4.0 and 4.3 percent at the end of 2018. Participants' projections also shifted down in 2019 but were more dispersed than the distributions of their projected unemployment rates in the two earlier years. The distribution of projections for the longer-run normal unemployment rate shifted down modestly.

The Outlook for Inflation

The median of projections for headline PCE price inflation this year was 1.6 percent, down 0.3 percentage point from March. As in March, median projected inflation was 2.0 percent in 2018 and 2019. About half of the participants anticipated that inflation would continue to run a bit below 2 percent in 2018, while only one participant expected inflation above 2 percent in that year—and, in that case, just modestly so. More than half projected that inflation would be equal to the Committee's objective in 2019. A few participants projected that inflation would run slightly below 2 percent in that year, while several projected that it would run a little above 2 percent. The median of projections for core PCE price inflation was 1.7 percent in 2017, a decline of 0.2 percentage point from March; the median projection for 2018 and 2019 was 2.0 percent, as in the March projections.

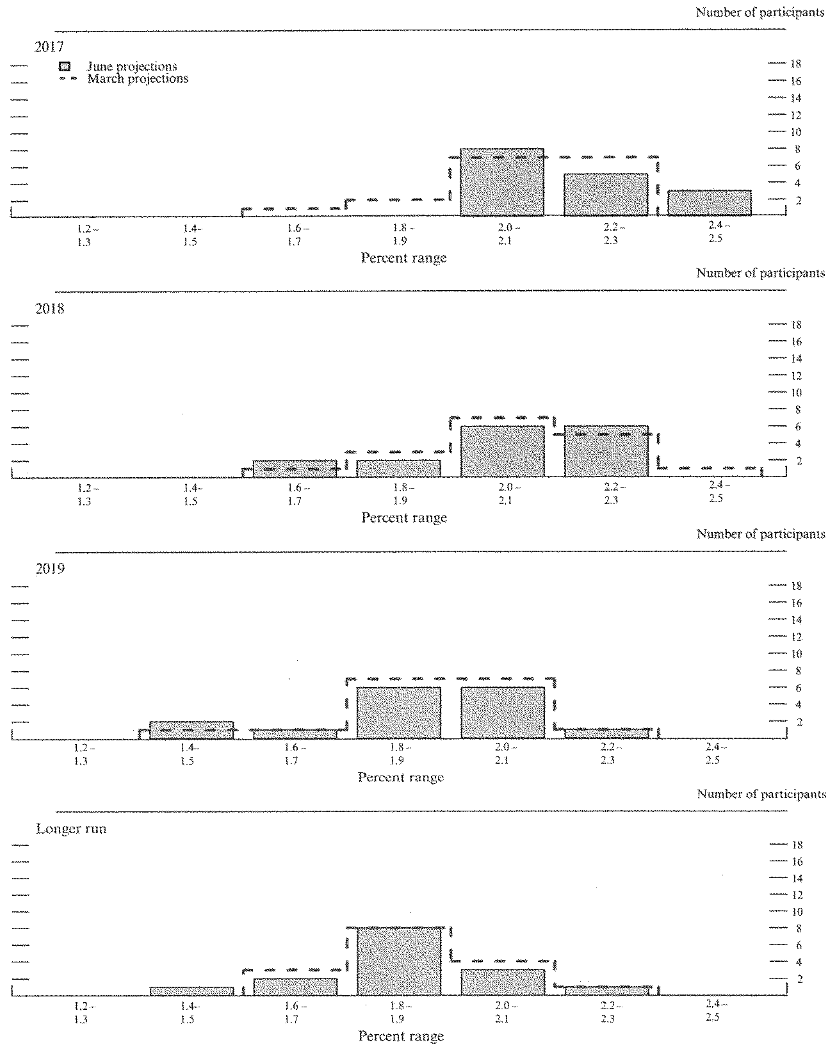
Figures 3.C and 3.D provide information on the distributions of participants' views about the outlook for inflation. The distributions of projections for headline PCE price inflation and for core PCE price inflation in 2017 shifted down noticeably from March, while the distributions for both measures of inflation in 2018 shifted down slightly. Many participants cited recent surprisingly low readings on inflation as a factor contributing to the revisions in their inflation forecasts.

Appropriate Monetary Policy

Figure 3.E provides the distribution of participants' judgments regarding the appropriate target or midpoint of the target range for the federal funds rate at the end of each year from 2017 to 2019 and over the longer run.[12] The distribution for 2017 was less dispersed than that in March, while the distribution for 2018 was slightly less

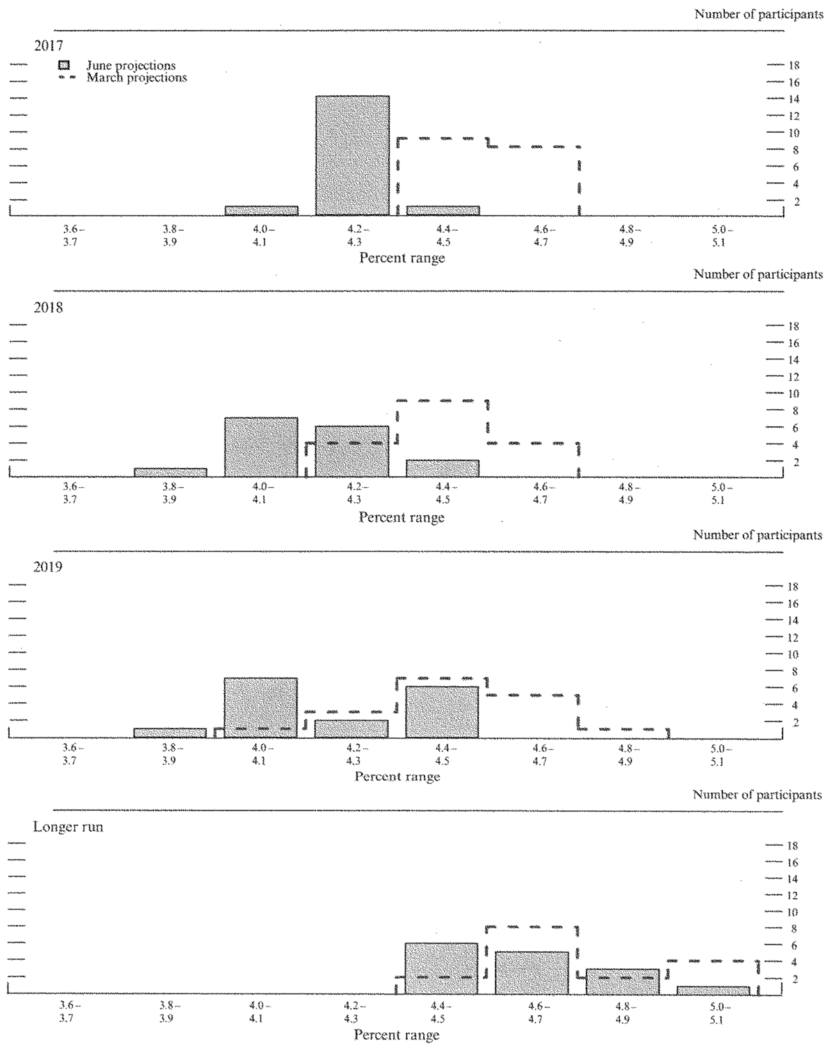
12. One participant's projections for the federal funds rate, real GDP growth, the unemployment rate, and inflation were informed by the view that there are multiple possible medium-term regimes for the U.S. economy, that these regimes are persistent, and that the economy shifts between regimes in a way that cannot be forecast. Under this view, the economy currently is in a regime characterized by expansion of economic activity with low productivity growth and a low short-term real interest rate, but longer-term outcomes for variables other than inflation cannot be usefully projected.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2017–19 and over the longer run



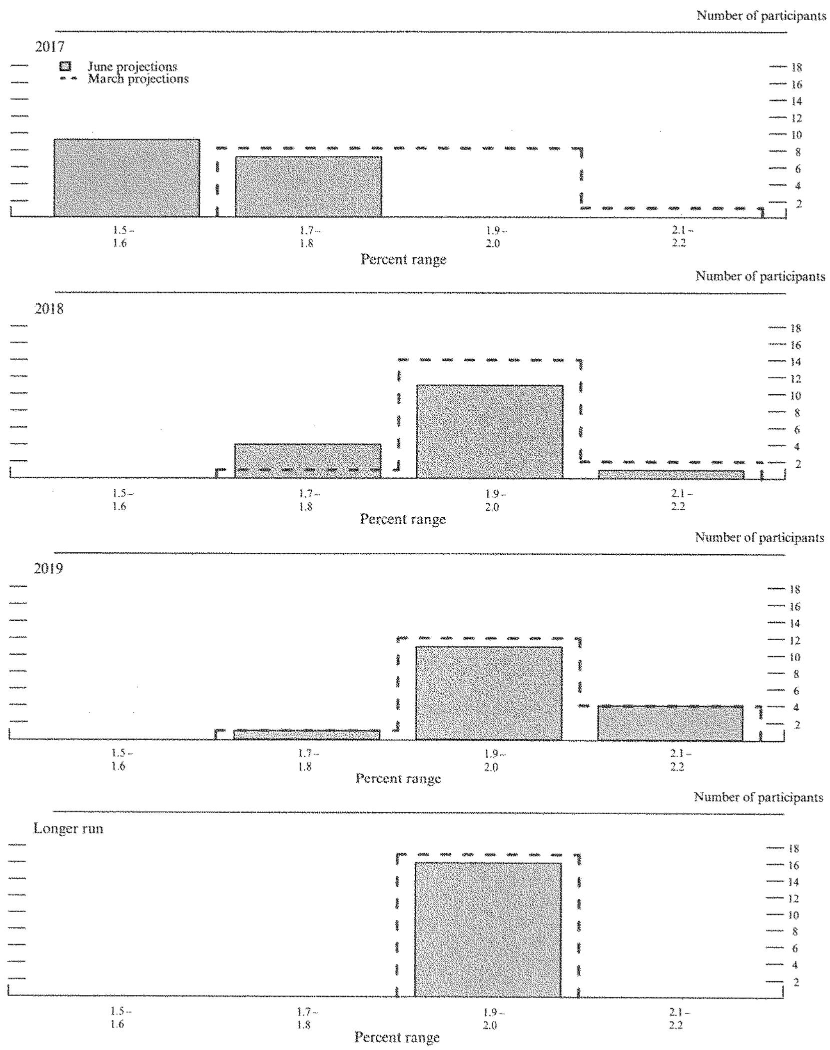
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2017–19 and over the longer run



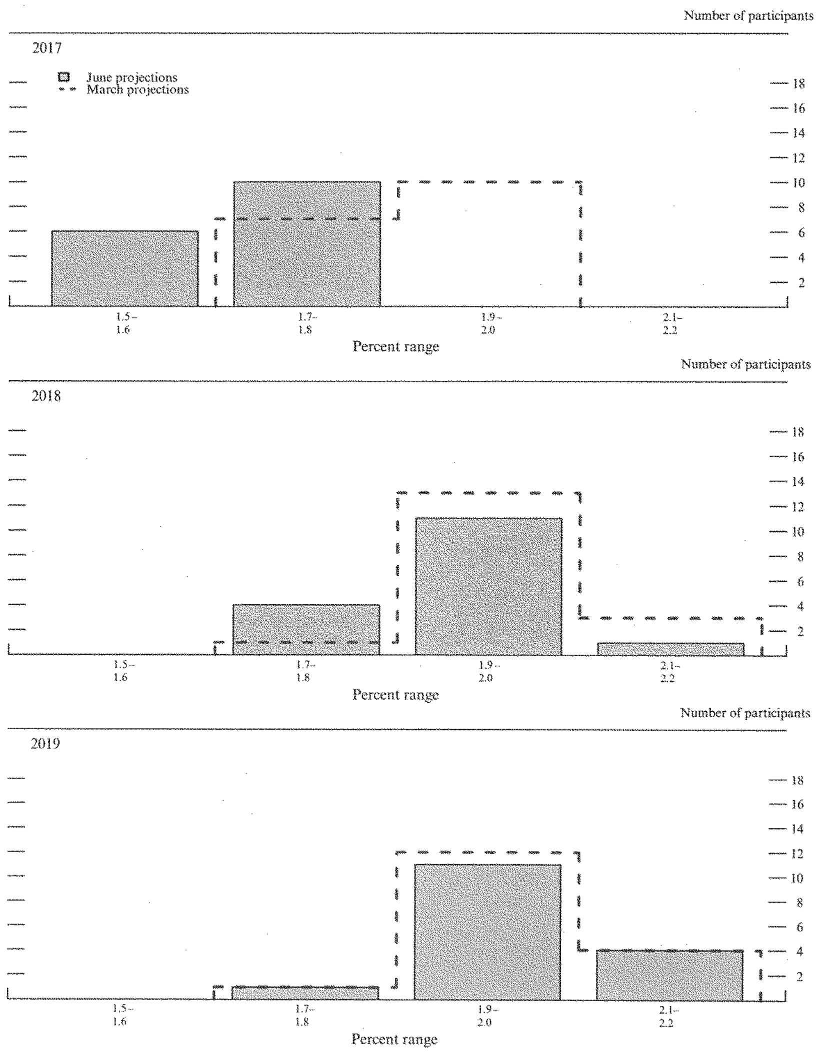
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2017–19 and over the longer run



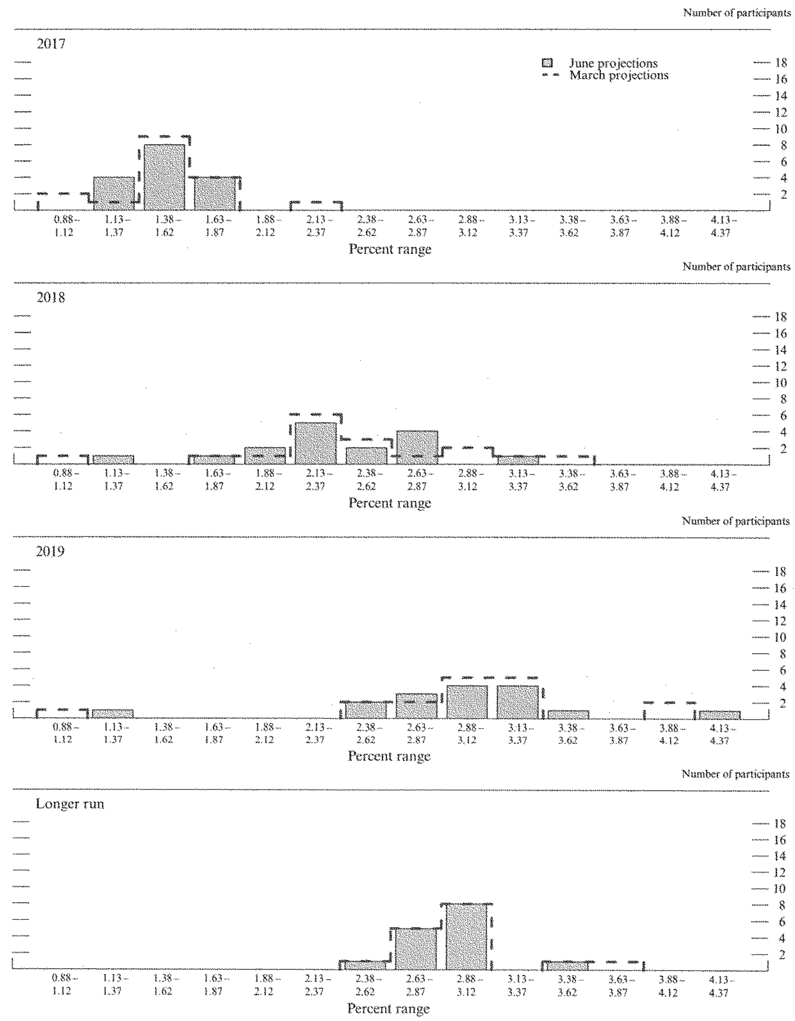
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2017–19



NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2017–19 and over the longer run



NOTE: Definitions of variables and other explanations are in the notes to table 1.

dispersed. The distributions in 2019 and in the longer run were broadly similar to those in March. The median projections of the federal funds rate continued to show gradual increases, with the median assessment for 2017 standing at 1.38 percent, consistent with three 25 basis point increases this year. Thereafter, the medians of the projections were 2.13 percent at the end of 2018 and 2.94 percent at the end of 2019; the median of the longer-run projections of the federal funds rate was 3.00 percent.

In discussing their June projections, many participants continued to express the view that the appropriate upward trajectory of the federal funds rate over the next few years would likely be gradual. That anticipated pace reflected a few factors, such as a neutral real interest rate that was currently low and was expected to move up only slowly as well as a gradual return of inflation to the Committee's 2 percent objective. Several participants judged that a slightly more accommodative path of monetary policy than in their previous projections would likely be appropriate, citing an apparently slower rate of progress toward the Committee's 2 percent inflation objective. In their discussions of appropriate monetary policy, half of the participants commented on the Committee's reinvestment policy; all of those who did so expected a change in reinvestment policy before the end of this year.

Uncertainty and Risks

Projections of economic variables are subject to considerable uncertainty. In assessing the path of monetary policy that, in their view, is likely to be most appropriate, FOMC participants take account of the range of possible outcomes, the likelihood of those outcomes, and the potential benefits and costs to the economy should they occur. Table 2 provides one measure of forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation—the root mean squared error (RMSE) for forecasts made over the past 20 years. This measure of forecast uncertainty is incorporated graphically in the top panels of figures 4.A, 4.B, and 4.C, which display fan charts plotting the median SEP projections for the three variables surrounded by symmetric confidence intervals derived from the RMSEs presented in table 2. If the degree of uncertainty attending these projections is similar to the typical magnitude of past forecast errors and if the risks around the projections are broadly balanced, future outcomes of these variables would have about a 70 percent probability of occurring within these confidence intervals. For all three variables, this measure of forecast uncertainty is substantial and generally increases as the forecast horizon lengthens.

Table 2. Average historical projection error ranges

Percentage points

Variable	2017	2018	2019
Change in real GDP[1]	±1.4	±2.0	±2.2
Unemployment rate[1]	±0.4	±1.2	±1.8
Total consumer prices[2]	±0.8	±1.0	±1.0
Short-term interest rates[3]	±0.7	±2.0	±2.2

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1997 through 2016 that were released in the summer by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, consumer prices, and the federal funds rate will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2017), "Gauging the Uncertainty of the Economic Outlook Using Historical Forecasting Errors: The Federal Reserve's Approach," Finance and Economics Discussion Series 2017-020 (Washington: Board of Governors of the Federal Reserve System, February), available at www.federalreserve.gov/econresdata/feds/2017/files/2017020pap.pdf.

1. Definitions of variables are in the general note to table 1.

2. Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

3. For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Historical projections are the average level, in percent, in the fourth quarter of the year indicated.

FOMC participants may judge that the width of the historical fan charts shown in figures 4.A through 4.C does not adequately capture their current assessments of the degree of uncertainty that surrounds their economic projections. Participants' assessments of the current level of uncertainty surrounding their economic projections are shown in the bottom-left panels of figures 4.A, 4.B, and 4.C. All or nearly all participants viewed the uncertainty attached to their economic projections as broadly similar to the average of the past 20 years, with three fewer participants than in March seeing uncertainty about GDP growth, the unemployment rate, and inflation as higher than its historical average.[13] In their discussion of the uncertainty attached to their current projections, most participants again expressed the view that, at this point, uncertainty surrounding prospective changes in fiscal and other government policies is very large or that there is not yet enough information to make reasonable assumptions about the timing, nature, and magnitude of the changes.

The fan charts—which are constructed so as to be symmetric around the median projections—also may not fully reflect participants' current assessments of the balance of risks to their economic projections. Participants' assessments of the balance of risks to their economic projections are shown in the bottom-right panels of figures 4.A, 4.B, and 4.C. As in March, most participants judged the risks to their projections of real GDP growth, the unemployment rate, headline inflation, and core inflation as broadly balanced—in other words, as broadly consistent with a symmetric fan chart. Three participants judged the risks to the unemployment rate as weighted to the downside, and one participant judged the risks as weighted to the upside (as shown in the lower-right panel of figure 4.B). In addition, the balance of risks to participants' inflation projections shifted down slightly from March (shown in the lower-right panels of figure 4.C), as two fewer participants judged the risks to inflation to be weighted to the upside and two more viewed the risks as weighted to the downside.

13. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

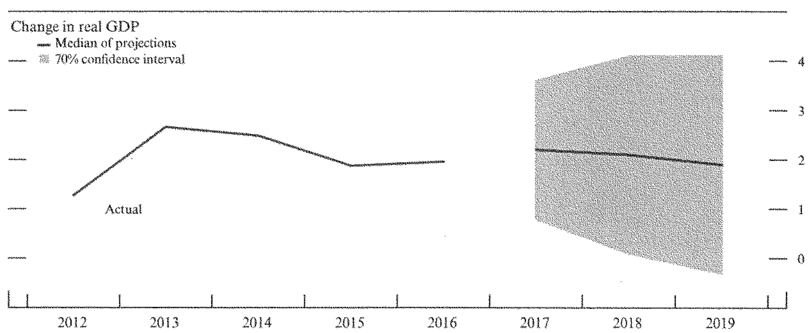
Participants' assessments of the future path of the federal funds rate consistent with appropriate policy are also subject to considerable uncertainty, reflecting in part uncertainty about the evolution of GDP growth, the unemployment rate, and inflation over time. The final line in table 2 shows the RMSEs for forecasts of short-term interest rates. These RMSEs are not strictly consistent with the SEP projections for the federal funds rate, in part because the SEP projections are not forecasts of the likeliest outcomes but rather reflect each participant's individual assessment of appropriate monetary policy. However, the associated confidence intervals provide a sense of the likely uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables and additional adjustments to monetary policy that may be appropriate to offset the effects of shocks to the economy.

Figure 5 shows a fan chart plotting the median SEP projections for the appropriate path of the federal funds rate surrounded by confidence intervals derived from the results presented in table 2. As with the macroeconomic variables, forecast uncertainty is substantial and increases at longer horizons.[14]

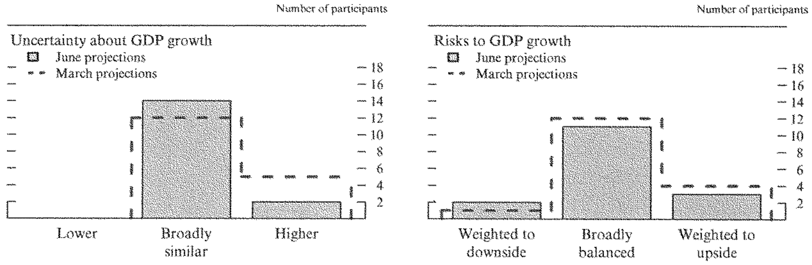
14. If at some point in the future the confidence interval around the federal funds rate were to extend below zero, it would be truncated at zero for purposes of the chart shown in figure 5; zero is the bottom of the lowest target range for the federal funds rate that has been adopted by the Committee in the past. This approach to the construction of the federal funds rate fan chart would be merely a convention and would not have any implication for possible future policy decisions regarding the use of negative interest rates to provide additional monetary policy accommodation if doing so were appropriate.

Figure 4.A. Uncertainty and risks in projections of GDP growth

Median projection and confidence interval based on historical forecast errors



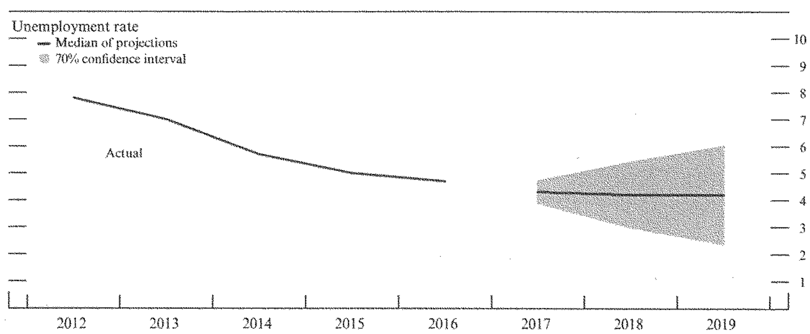
FOMC participants' assessments of uncertainty and risks around their economic projections



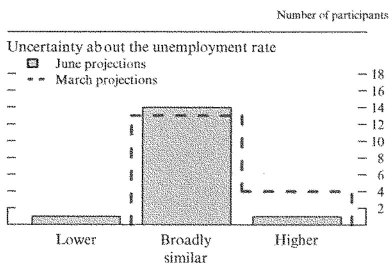
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

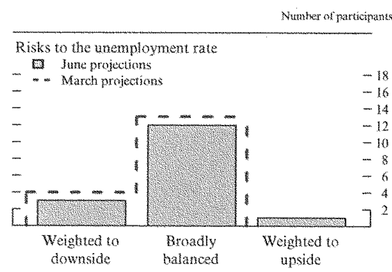
Figure 4.B. Uncertainty and risks in projections of the unemployment rate

Median projection and confidence interval based on historical forecast errors



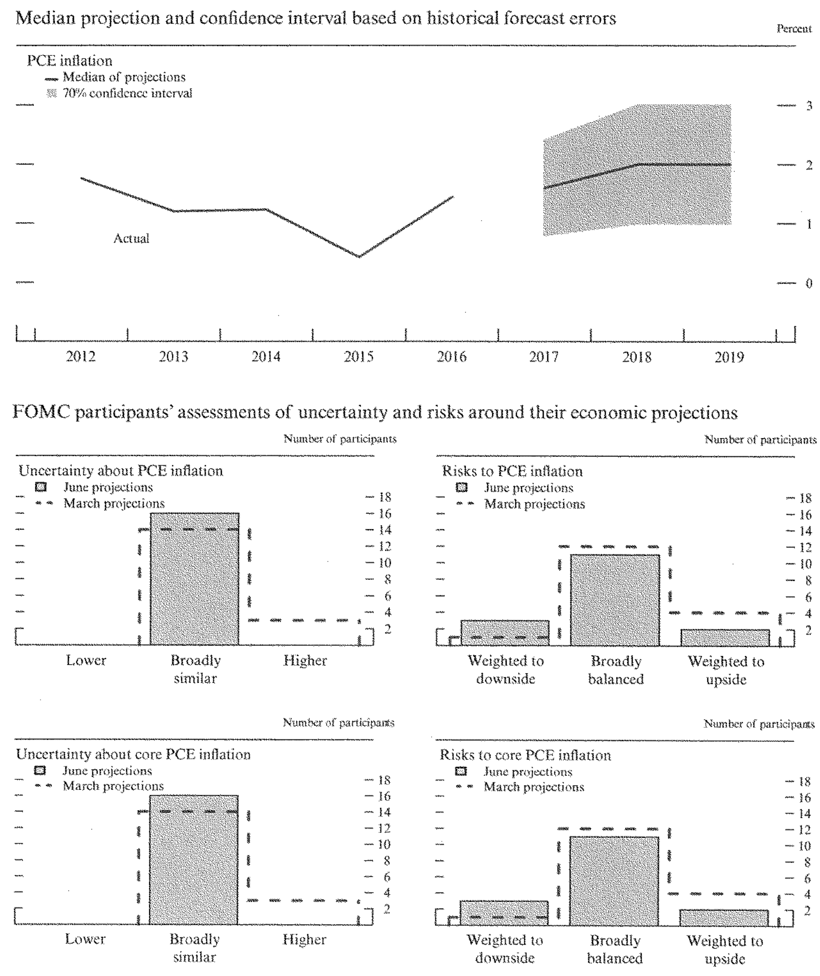
FOMC participants' assessments of uncertainty and risks around their economic projections





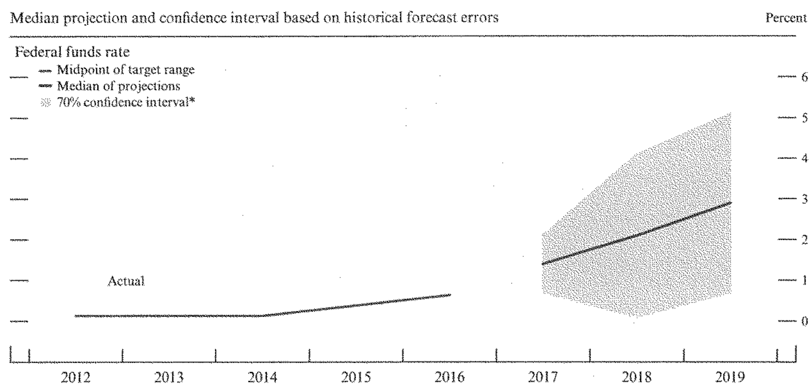
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.C. Uncertainty and risks in projections of PCE inflation



NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 5. Uncertainty in projections of the federal funds rate



NOTE: The blue and red lines are based on actual values and median projected values, respectively, of the Committee's target for the federal funds rate at the end of the year indicated. The actual values are the midpoint of the target range; the median projected values are based on either the midpoint of the target range or the target level. The confidence interval around the median projected values is based on root mean squared errors of various private and government forecasts made over the previous 20 years. The confidence interval is not strictly consistent with the projections for the federal funds rate, primarily because these projections are not forecasts of the likeliest outcomes for the federal funds rate, but rather projections of participants' individual assessments of appropriate monetary policy. Still, historical forecast errors provide a broad sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that may be appropriate to offset the effects of shocks to the economy.

The confidence interval is assumed to be symmetric except when it is truncated at zero—the bottom of the lowest target range for the federal funds rate that has been adopted in the past by the Committee. This truncation would not be intended to indicate the likelihood of the use of negative interest rates to provide additional monetary policy accommodation if doing so was judged appropriate. In such situations, the Committee could also employ other tools, including forward guidance and large-scale asset purchases, to provide additional accommodation. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections.

* The confidence interval is derived from forecasts of the average level of short-term interest rates in the fourth quarter of the year indicated; more information about these data is available in table 2. The shaded area encompasses less than a 70 percent confidence interval if the confidence interval has been truncated at zero.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee (FOMC). The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 1.6 to 4.4 percent in the current year, 1.0 to 5.0 percent in the second year, and 0.8 to 5.2 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.2 to 2.8 percent in the current year, and 1.0 to 3.0 percent in the second and third years. Figures 4.A through 4.C illustrate these confidence bounds in "fan charts" that are symmetric and centered on the medians of FOMC participants' projections for GDP growth, the unemployment rate, and inflation. However, in some instances, the risks around the projections may not be symmetric. In particular, the unemployment rate cannot be negative; furthermore, the risks around a particular projection might be tilted to either the upside or the downside, in which case the corresponding fan chart would be asymmetrically positioned around the median projection.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each economic variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty seen in the past 20 years, as presented in table 2 and reflected in the widths of the confidence intervals shown in the top panels of figures 4.A through 4.C. Participants' current assessments of the uncertainty surrounding their projections are summarized in the bottom-left panels of those figures. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, while the symmetric historical fan charts shown in the top panels of figures 4.A through 4.C imply that the risks to participants' projections are balanced, participants may judge that there is a greater risk that a given variable will be above rather than below their projections. These judgments are summarized in the lower-right panels of figures 4.A through 4.C.

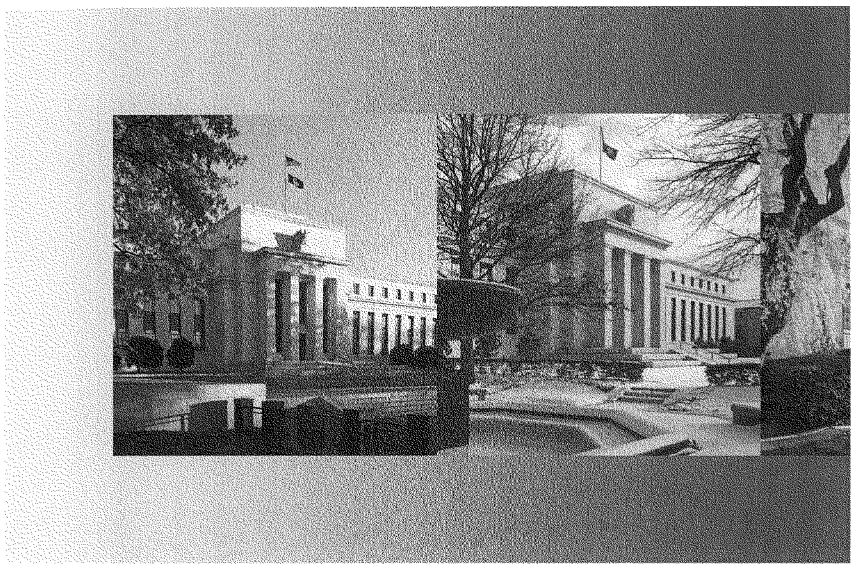
As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward. The final line in table 2 shows the error ranges for forecasts of short-term interest rates. They suggest that the historical confidence intervals associated with projections of the federal funds rate are quite wide. It should be noted, however, that these confidence intervals are not strictly consistent with the projections for the federal funds rate, as these projections are not forecasts of the most likely quarterly outcomes but rather are projections of participants' individual assessments of appropriate monetary policy and are on an end-of-year basis. However, the forecast errors should provide a sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that would be appropriate to offset the effects of shocks to the economy.

If at some point in the future the confidence interval around the federal funds rate were to extend below zero, it would be truncated at zero for purposes of the fan chart shown in figure 5; zero is the bottom of the lowest target range for the federal funds rate that has been adopted by the Committee in the past. This approach to the construction of the federal funds rate fan chart would be merely a convention; it would not have any implications for possible future policy decisions regarding the use of negative interest rates to provide additional monetary policy accommodation if doing so were appropriate. In such situations, the Committee could also employ other tools, including forward guidance and asset purchases, to provide additional accommodation.

While figures 4.A through 4.C provide information on the uncertainty around the economic projections, figure 1 provides information on the range of views across FOMC participants. A comparison of figure 1 with figures 4.A through 4.C shows that the dispersion of the projections across participants is much smaller than the average forecast errors over the past 20 years.

Abbreviations

AFE	advanced foreign economy
BOE	Bank of England
C&I	commercial and industrial
DPI	disposable personal income
ECB	European Central Bank
EME	emerging market economy
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
LFPR	labor force participation rate
LIBOR	London interbank offered rate
MBS	mortgage-backed securities
Michigan survey	University of Michigan Surveys of Consumers
OIS	overnight index swap
ON RRP	overnight reverse repurchase agreement
OPEC	Organization of the Petroleum Exporting Countries
PCE	personal consumption expenditures
SEP	Summary of Economic Projections
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
S&P	Standard & Poor's
TIPS	Treasury Inflation-Protected Securities



<u>**Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Beatty:**</u>

1. While the economy has battled its way back from the deepest recession since the Great Depression, many Americans still have not felt the effects of this recovery. For instance, while the overall unemployment numbers have come down considerably since the depths of the Financial Crisis in 2008, wage growth has only recently begun to grow. While the cost of healthcare, housing, and everyday consumer products has increased, Americans wages have not kept pace. After the March FOMC meeting, you stated that "one of the things that has been holding down wage increases is very slow productivity growth." You also have stated in the past that slow productivity growth, along with the widening income gap, are long-term risks facing our economy, that only policymakers can address.

Why is the U.S. facing slow productivity growth and how do policymakers combat this problem, so that we can see wage growth for the average American?

In part, the weakness in productivity growth in recent years likely reflects the enduring effects of the Great Recession. For example, there is some evidence that the recession led to a long-lasting reduction in business investment, research and development spending, and new business formation, and that these factors have lowered productivity growth.[1] That said, productivity growth began to slow even before the Great Recession, and some research has suggested that the earlier deceleration was the result of economic effects of the 1990s IT revolution having largely run their course by the mid-2000s.[2,3]

While there is a range of opinions about what policies would effectively increase productivity and hence help to achieve more robust GDP growth, some combination of improved public infrastructure, better education, more encouragement for private investment, and more effective regulation would likely contribute positively toward those objectives.

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[1] Reifschneider, Dave, William Wascher, and David Wilcox (2015). "Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy," *IMF Economic Review*, vol. 63, no. 1, pp. 71-109.

[2] Fernald, John G. (2014) "Productivity and Potential Output Before, During, and after the Great Recession," *NBER Macroeconomics Annual* 29(1), pp. 1-51.

[3] It has also been argued that mismeasurement of real output could have contributed to the weakness in measured productivity growth. However, recent research by Byrne, Fernald, and Reinsdorf casts doubt on the ability of this hypothesis to explain the recent slowdown. Byrne, David M., J. Fernald, and Marshall Reinsdorf. (Spring-2016), "Does the United States Have a Productivity Slowdown or a Measurement Problem?" *Brookings Papers on Economic Activity*.

Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Beatty:

2. As you may know, thousands of my constituents work for several regional banks with significant operations in the Third Congressional District of Ohio and the Greater Columbus Metropolitan area. In April, former Governor Tarullo gave a departing speech at the Woodrow Wilson School at Princeton University where he discussed the post-crisis regulatory response. Within that speech, he offered some areas of bank regulation that he thought made sense to right-size, specifically, the $50 billion SIFI threshold, the $10 billion stress test threshold, and implementation of the Volcker rule.

Obviously, these are decisions for policymakers to make, but I wanted to give you the opportunity to address these remarks by your former colleague and offer any comments or thoughts you may have on some of the issues he addressed. Specifically, what is the appropriate asset threshold for SIFI designation, if there is one?

In all of our efforts, our goal is to establish a regulatory framework that helps ensure the resiliency of our financial system, the availability of credit, economic growth, and financial market efficiency. The Federal Reserve has been working for many years to make sure that our regulation and supervision is tailored to the size and risk posed by individual institutions.

The failure or distress of a large bank can harm the U.S. economy. The recent financial crisis demonstrated that excessive risk-taking at large banks makes the U.S. economy vulnerable. The crisis led to a deep recession and the loss of nearly nine million jobs. Our regulatory framework must reduce the risk that bank failures or distress will have such a harmful impact on economic growth in the future.

The Federal Reserve Board (Board) has already implemented, via a regulation that was proposed and adopted following a period of public notice and comment, a methodology to identify global systemically important banking organizations (GSIBs), whose failure could pose a significant risk to the financial stability of the United States.[1] The "systemic footprint" measure, which determines whether a large firm is identified as a GSIB, includes attributes that serve as proxies for the firm's systemic importance across a number of categories: size, interconnectedness, complexity, cross-jurisdictional activity, substitutability, and reliance on short-term wholesale funding.

There are many large financial firms whose failure would pose a less significant risk to U.S. financial stability, but whose distress could nonetheless cause notable harm to the U.S. economy (i.e., large regional banks). The failure or distress of a large regional bank could harm the U.S. economy in several ways: by disrupting the flow of credit to households and businesses, by disrupting the functioning of financial markets, or by interrupting the provision of critical financial services, including payments, clearing, and settlement. Economic research has documented that a disruption in the flow of credit through banks or a disruption to financial

[1] Board of Governors of the Federal Reserve System (2015), "Regulatory Capital Rules: Implementation of Risk-Based Capital Surcharges for Global Systemically Important Bank Holding Companies," final rule, *Federal Register*, vol 80 (August 14), pp. 49082-49116.

market functioning can affect economic growth.[2] Some level of tailored enhanced regulation is therefore appropriate for these large regional banks.

The application of tailored enhanced regulation should consider the size, complexity, and business models of large regional banks. The impact on economic growth of a large regional bank's failure will depend on factors such as the size and geographic distribution of the bank's customer base and the types and number of borrowers that depend on the bank for credit. Asset size is a simple way to proxy for these impacts, although other measures may also be appropriate. For large regional banks with more complex business models, more sophisticated supervisory and regulatory tools may be appropriate. For example, the Board recently tailored our Comprehensive Capital Analysis and Review qualitative assessment to exclude some smaller and less complex large regional banks, using asset size and nonbank assets to measure size and complexity, respectively.[3] In other contexts, foreign activity or short-term wholesale funding may be another dimension of complexity to consider. Any characteristics or measures that are used to tailor enhanced regulation for large regional banks should be supported with clear analysis that links them with the potential for the bank's failure or distress to cause notable harm to the U.S. economy.

The Board currently has only limited authority to tailor the enhanced prudential standards included in section 165 of the Dodd-Frank Act. In particular, Congress required that certain enhanced prudential standards must apply to firms with $10 billion in total assets, with other standards beginning to apply at $50 billion in total assets. I understand that Congress is currently considering whether and how to raise these statutory thresholds. The Board has supported increasing these thresholds. As an alternative to simply raising the thresholds, I believe that it would be logical to use a wider range of factors than asset size to determine the application of tailored enhanced regulation for large regional banks. Congress could usefully decide to pursue either raising the dollar thresholds and/or giving authority to the Board to decide which firms are subject to enhanced prudential standards. The Board is committed to continuing to work with Members of Congress on this issue.

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[2] For evidence on the link between bank distress and economic growth, see Mark A. Carlson, Thomas King, and Kurt Lewis (2011) "Distress in the Financial Sector and Economic Activity," The B.E. Journal of Economic Analysis & Policy: Vol. 11: Iss. 1 (Contributions), Article 35. For evidence on the link between financial market functioning and economic growth, see Simon Gilchrist and Egon Zakrajšek (2012), "Credit Spreads and Business Cycle Fluctuations," American Economic Review, Vol. 102(4): 1692-1720.

[3] Board of Governors of the Federal Reserve System (2017), "Amendments to the Capital Plan and Stress Test Rules; Regulations Y and YY," final rule, Federal Register, vol 82 (February 3), pp. 9308-9330.

<u>Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Loudermilk</u>:

1. As you know, pursuant to Executive Order 13772, the Department of the Treasury released a report titled "A Financial System that Creates Economic Opportunities: Banks and Credit Unions" on June 12, 2017. This report contains numerous recommendations for regulatory relief for financial institutions, and I appreciate that you have indicated that you generally support these recommendations.

a. Specifically, the report recommends that the $50 billion threshold for application of enhanced prudential standards to institutions be more appropriately tailored to the risk profile of bank holding companies. Further, the report recommends that Federal Reserve update the threshold for applying CCAR stress tests and living wills to match that revised threshold. Do you agree with this recommendation?

b. The report also recommends that the Federal Reserve consider putting CCAR stress tests and living wills under a two-year cycle. Do you agree with this recommendation?

In all of our efforts, our goal is to establish a regulatory framework that helps ensure the resiliency of our financial system, the availability of credit, economic growth, and financial market efficiency. The Federal Reserve has been working for many years to tailor our regulation and supervision to the size and risk posed by individual institutions.

The failure or distress of a large bank can harm the U.S. economy. The recent financial crisis demonstrated that excessive risk-taking at large banks can threaten the U.S. economy. The crisis led to a deep recession and the loss of nearly nine million jobs. Our regulatory and supervisory framework must aim to reduce the risk that bank failures or distress will have such a harmful impact on economic growth in the future.

The Federal Reserve Board (Board) has already implemented, via a regulation that was proposed and adopted following a period of public notice and comment, a methodology to identify global systemically important banking organizations (GSIBs), whose failure could pose a significant risk to the financial stability of the United States.[1] This "systemic footprint" measure, which determines whether a large firm is identified as a GSIB, includes attributes that serve as proxies for the firm's systemic importance across a number of categories: size, interconnectedness, complexity, cross-jurisdictional activity, substitutability, and reliance on short-term wholesale funding.

There are many large financial firms whose failure would pose a less significant risk to U.S. financial stability, but whose distress could nonetheless cause notable harm to the U.S. economy. The failure or distress of a bank of this nature could harm the U.S. economy in several ways: by disrupting the flow of credit to households and businesses, by disrupting the functioning of financial markets, or by interrupting the provision of critical financial services, including payments, clearing, and settlement. Economic research has documented that a disruption in the

[1] Board of Governors of the Federal Reserve System (2015), "Regulatory Capital Rules: Implementation of Risk-Based Capital Surcharges for Global Systemically Important Bank Holding Companies," final rule, *Federal Register*, vol 80 (August 14), pp. 49082-49116.

flow of credit through banks or a disruption to financial market functioning can affect economic growth.[2] Some level of enhanced, but appropriately tailored, standards are therefore appropriate for certain large, non-GSIB banks.

Any application of enhanced, but tailored standards to large, non-GSIB banks should consider their size, complexity, and business models. The impact on economic growth of a bank's failure will depend on factors such as the size and geographic distribution of the bank's customer base and the types and number of borrowers that depend on the bank for credit. Asset size is a simple way to proxy for these impacts, although other measures may also be appropriate. For banks with more complex business models, more sophisticated supervisory and regulatory tools may be appropriate. For example, the Board recently tailored our Comprehensive Capital Analysis and Review (CCAR) qualitative assessment to exclude some smaller and less complex large regional banks, using asset size and nonbank assets to measure size and complexity, respectively.[3] In other contexts, foreign activity or short-term wholesale funding may be another dimension of complexity to consider. Any characteristics or measures that are used to tailor enhanced standards for large, non-GSIB banks should be supported with clear analysis that links them to the potential for the bank's failure or distress to cause notable harm to the U.S. economy.

The Board currently has only limited authority to tailor the enhanced prudential standards included in section 165 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. In particular, Congress required that certain enhanced prudential standards apply to firms with $10 billion or more in total assets, with different standards beginning to apply at $50 billion or more in total assets.

I understand that Congress is currently considering whether and how to raise these statutory thresholds. The Board has supported increasing these thresholds and is committed to continuing to work with Members of Congress on this issue.

With regard to the proposal to extend the timing of the CCAR assessment from annually to every two years, large banks continue to innovate and adapt their businesses, which is a normal practice for profit-making institutions. CCAR is designed to evaluate capital planning and positions relative to those changes, as well as any changes in a bank's balance sheet, and test for salient risks across the entire financial system. Given the dynamic nature of banks and the risks that they face, capital planning practices are most effective when they address the relevant risks of the firm, and therefore our current supervisory practice includes annual quantitative and qualitative assessments.[4]

With regard to resolution planning, the Government Accountability Office has recommended lengthening the current one-year resolution plan filing cycle to provide sufficient time for regulators to complete their plan reviews and feedback, and for firms to address and incorporate

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[2] For evidence on the link between bank distress and economic growth, see Mark A. Carlson, Thomas King, and Kurt Lewis (2011) "Distress in the Financial Sector and Economic Activity," The B.E. Journal of Economic Analysis & Policy: Vol. 11: Iss. 1 (Contributions), Article 35. For evidence on the link between financial market functioning and economic growth, see Simon Gilchrist and Egon Zakrajšek (2012), "Credit Spreads and Business Cycle Fluctuations," American Economic Review, Vol. 102(4): 1692-1720.

[3] Board of Governors of the Federal Reserve System (2017), "Amendments to the Capital Plan and Stress Test Rules; Regulations Y and YY," final rule, Federal Register, vol 82 (February 3), pp. 9308-9330.

regulators' feedback in subsequent plan filings. The Board and Federal Deposit Insurance Corporation continue to explore ways to improve the resolution planning process and believe it would be worthwhile to consider extending the cycle for living will submissions from annually to once every two years. Doing so would require amending the agencies' respective implementing regulations, which currently require annual plan submissions. In the meantime, I would note that the agencies have taken a number of steps in recent years to simplify the resolution plan filing process, for example by extending the plan submission deadline in a number of instances, and by reducing the plan content requirements for foreign banking organizations with a relatively small footprint in the United States. Also, resolution plan guidance provided to firms other than those that are largest and most systemically important has been tailored to reflect their smaller size and less-complex business models.

Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Ross:

1. Since the Federal Reserve Board (FRB) is a significant participant in the International Association of Insurance Supervisors (IAIS), which is attempting to develop a global group capital standard, can you provide any insight into the status of the Insurance Capital Standard (ICS) work at the IAIS and do you believe the 2019 deadline for IAIS adoption of ICS 2.0, the first version that member jurisdictions are expected to implement, will be kept? Will the FRB advocate that any version of the ICS should include recognition of U.S. state based capital standards and the capital standard currently under development by the FRB as at least one alternative for compliance?

The Insurance Capital Standard (ICS) aims to be the first international, group-wide capital standard broadly applicable to internationally active insurance groups. The International Association of Insurance Supervisors (IAIS) began work on the ICS in 2013, issued an initial consultative proposal in late 2014, and published a subsequent consultative proposal on an ICS version 1.0 in July 2016. A revised consultative proposal on an ICS version 2.0 is currently contemplated for the middle of 2018. Depending on the outcome of the consultation, stakeholder input, and data collection, as well as IAIS member review, appropriate subsequent steps will be determined. The ICS is scheduled to be adopted by the IAIS in late 2019. However, it is possible that ongoing discussions regarding the inclusion of other methods in the ICS, including possible aggregation approaches, result in the postponement of the IAIS' adoption. Importantly, standards developed at the IAIS are not self-executing or binding on the U.S. unless adopted by the appropriate lawmakers or regulators in the U.S. in accordance with applicable domestic laws and rulemaking procedures.

Together with the National Association of Insurance Commissioners (NAIC) and Federal Insurance Office, the Federal Reserve advocates for the development of international standards at the IAIS that would be appropriate for the U.S., including an implementable ICS. The Federal Reserve, along with its other U.S. colleagues, is advocating the ICS's inclusion of aggregation methods such as the NAIC's group capital calculation and the Federal Reserve's building block approach.

2. It appears that the "Building Block Approach" the FRB is developing as a capital standard for savings & loan holding companies that include insurers is similar in some basic respects to the "RBC (Risk-Based Capital) Aggregation Approach" being developed by the National Association of Insurance Commissioners (NAIC). If any capital standard proposed by the FRB differs from the NAIC's state-based standards, will the costs versus benefits of those differences be publicly assessed with regard to their effect on U.S. consumers and U.S. markets? How will that be done, with Congressional, state and stakeholder input?

The Federal Reserve Board (Board) remains mindful of the longstanding importance of the states' primary supervision of the insurance industry, which the Board's consolidated supervision complements and supplements. As stated in its advance notice of proposed rulemaking (ANPR) published in June 2016, a goal of the Board's proposed building block approach (BBA) is to efficiently use existing legal-entity-level regulatory capital frameworks, including those under state laws.

In its comment letter to the ANPR, the NAIC expressed its desire to work with the Board in its development of the BBA. The Board welcomes this interest, consistent with the Board's commitment to transparency and engagement with interested parties. Input from the NAIC would enhance the identification of commonality and ways to minimize inconsistency and burden upon the Board's supervised insurance firms. The proposed BBA is pursuant to the Board's statutory authority to set out capital standards for supervised insurance institutions as consolidated supervisor. It is not yet clear what form the NAIC's group capital calculation will take, though we note that the NAIC frequently produces model laws and regulations for states to evaluate and, if agreeable, adopt, potentially with tailoring. This differentiates the two capital frameworks structurally, and it is premature to say whether this will affect the content of the frameworks.

To the extent that technical or other considerations result in areas that reasonably may not be addressed identically between the two frameworks, the Board remains committed to transparency in its rulemaking process, engagement with congressional, state, and any other interested parties, and evaluation of costs, benefits, and economic impacts. In developing its proposed rules, the Board routinely considers a variety of alternatives and an initial balancing of costs and benefits of a proposal. As part of its rulemaking process, the Board seeks comment from the public on the burdens and benefits of our proposed approach in a rule as well as on alternative approaches. With respect to its insurance standards, and all other rulemakings, the Board follows the Administrative Procedures Act and other applicable administrative laws and practices that govern the various aspects of rulemakings, including the consideration of costs and benefits.

<u>**Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Rothfus:**</u>

1. The Financial Stability Board (FSB) and International Association of Insurance Supervisors (IAIS) conduct most of their activities behind closed doors, to the detriment of stakeholders and consumers affected by their activities. While the IAIS has made some improvements lately, its procedures still require significant improvement. Will you agree to additional transparency and accountability and more consultation with Congress before taking positions in international insurance regulatory discussions? If not, why not? And will you agree to use your influence at the IAIS and the FSB to improve their openness and accountability? If not, why not?

The Federal Reserve Board (Board) remains committed to transparency and accountability in the development of international insurance standards at the Financial Stability Board (FSB) and International Association of Insurance Supervisors (IAIS). We support building on the enhanced transparency at the FSB and IAIS with further steps to improve access and stakeholder engagement at these institutions. For instance, before the FSB recommends a particular policy action, the FSB typically goes through a public notice and comment process similar to that which would accompany rulemaking in the United States. At the IAIS, the Federal Reserve supports the continued publication for public comment of consultation documents with proposed approaches and frameworks for the supervision of internationally active insurance groups. The Board, along with our partners, the National Association of Insurance Supervisors (NAIC) and Federal Insurance Office (FIO), will also continue to actively seek out and engage U.S. insurance stakeholders to ensure an understanding of their perspectives. Indeed, the U.S. delegation routinely hosts meetings with U.S. insurance stakeholders for open dialogue and active working sessions regarding policy matters currently before the IAIS, a level of engagement that will continue. We remain open to additional suggestions on how to improve transparency at the IAIS and FSB through our participation.

In addition, it is important to note that none of the policy actions recommended by the FSB would take effect in the U.S. without being adopted by U.S. authorities through a public notice and comment process. Thus, the Federal Reserve would not implement any FSB or IAIS standards in the U.S. without going through the same process as we do for our rulemakings.

The Federal Reserve continues to work with other U.S. participants in international insurance standard-setting processes--including state insurance regulators, the NAIC, and FIO--to develop international insurance standards that are consistent with supervisory objectives under applicable federal and state laws, regulations, and policies. Excessive delays in the ability of U.S. participants to advocate positions in international standards negotiations could seriously diminish the ability of the U.S. to influence outcomes and ensure that international standards work for U.S. firms, U.S. consumers, and the U.S. financial markets.

Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Royce:

1. Today, the Fed's $4.5 trillion portfolio is made up of roughly 55% Treasury securities and 45% agency MBS. You and the F-O-M-C (Federal Open Market Committee) have announced your intentions to begin unwinding this historic portfolio. As that portfolio normalizes, do you expect the ratio of Agency MBS to Treasuries to remain the same over time?

Following its June meeting, the Federal Open Market Committee (FOMC) provided additional details regarding its plans for normalizing the size and composition of the Federal Reserve's securities portfolio over time.[1] Under this plan, the Federal Reserve will reduce its securities holdings in a gradual and predictable process by reducing the reinvestment of principal payments on existing securities holdings. Projections published by the Federal Reserve Bank of New York in July indicate that, under a baseline scenario, this gradual, passive runoff of securities holdings will result in the normalization of the size of the Federal Reserve's balance sheet by the end of 2021.[2]

Under these projections, the share of Treasury securities in the Federal Reserve System's securities holdings will decline slightly over the next few years because the runoff of Treasury securities is somewhat faster than the runoff of agency mortgage-backed securities (MBSs). However, as noted in the FOMC's Policy Normalization Principles and Plans document published in September 2014, the FOMC has indicated that in the longer run it expects to hold a portfolio that consists "primarily of Treasury securities, thereby minimizing the effect of the Federal Reserve's securities holdings on the allocation of credit across sectors of the economy."

2. As you know, many have criticized the Fed for placing their "thumb on the scale" for one sector of our economy, currently holding 29% of the total outstanding Agency MBS. There are others who want you to go even further and invest in infrastructure and municipal securities, etc. As this extraordinary episode in the Fed's history comes to an end – and we are also looking towards housing finance reform – do you think it makes sense to reassess whether or not the Fed should be in a position to support certain sectors over others?

The Federal Reserve conducts monetary policy to achieve the dual mandate objectives of maximum employment and stable prices. At the end of 2008, the federal funds rate had already been cut to near zero, and the economy was in dire circumstances with unemployment moving sharply higher and deflationary pressures mounting. Additional policy accommodation was clearly required to support the economy and keep inflation from moving much lower. Against this backdrop, the Federal Reserve conducted large scale purchases of longer-term Treasury and agency MBSs as a tool to put downward pressure on longer-term interest rates and to make financial conditions more accommodative. Purchases of agency MBSs helped to support the mortgage and housing markets. These markets were under severe stress during the crisis and the

[1] This information is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm.

[2] https://www.newyorkfed.org/medialibrary/media/markets/omo/SOMAPortfolioandIncomeProjections_July2017Update.pdf.

strains in these markets posed significant downside risks to the U.S. economy. These policies were effective in helping to stabilize the economy and foster progress toward the Federal Reserve's goals of maximum employment and stable prices.

The conduct of monetary policy is focused on promoting maximum employment and stable prices and does not seek to support one sector over another. A joint statement of the Treasury and the Federal Reserve in 2009 noted that "Actions taken by the Federal Reserve should also aim to improve financial or credit condition broadly, not to allocate credit to narrowly-defined sectors or classes of borrowers. Government decisions to influence the allocation of credit are the province of the fiscal authorities."

It is important to note that the range of assets that the Federal Reserve can purchase is quite limited. The most important classes of assets by far that the Federal Reserve can purchase are Treasury and agency MBSs. The Federal Reserve's authority to purchase municipal securities is extremely limited and of little practical value as a policy tool. The Federal Reserve has no authority to purchase securities issued by the private sector.

3. In your submitted testimony you state that 'the longer-run normal level of reserve balances will depend on a number of as-yet-unknown factors...' But conclude that you 'anticipate' keeping the reserve balances at a level 'larger than before the financial crisis.' What is the reasoning behind keeping the portfolio above past 'normal' levels?

These issues are discussed at length in projections published by the Federal Reserve Bank of New York in an update to the Annual Report of the System Open Market Account.[3] The size of the portfolio over time is largely determined by two factors--the level of currency and other non-reserve liabilities and the level of reserve balances held by depository institutions. The level of currency and non-reserve liabilities is largely unrelated to the stance of monetary policy, and these liabilities tend to grow over time. The Federal Reserve generally increases its securities holdings slowly over time to match the growth of these liabilities. For example, the level of currency outstanding at the end of 2007 was about $800 billion and has risen to a level of about $1.6 trillion today. So even if the Federal Reserve had not engaged in large scale asset purchases, the size of the portfolio would have doubled in size since 2007 based on the expansion of currency alone.

The other key factor affecting the size of the balance sheet is the level of reserve balances held by depository institutions. This factor reflects the stance of monetary policy and the Federal Reserve's policy implementation framework. Just prior to the crisis, the level of reserve balances was quite small, on the order of $5 to $10 billion. Today, largely reflecting the expansion of the portfolio through asset purchase programs, reserve balances exceed $2 trillion. As the size of the Federal Reserve's balance sheet is normalized, the level of reserve balances will decline substantially. However, reserve balances may not decline to the very low levels that prevailed in the pre-crisis period because the level of reserve balances consistent with effective policy implementation may be higher than in past. For example, banks may demand significantly higher levels of reserve balances than in the past due to new liquidity regulations. Moreover, the scale transactions among banks has expanded over time, and this trend could lead

[3] https://www.newyorkfed.org/medialibrary/media/markets/omo/SOMAPortfolioandIncomeProjections_July2017Update.pdf.

banks to hold large precautionary levels of reserves. Although the level of reserve balances may ultimately be higher than in the pre-crisis period, as noted in the FOMC's Policy Normalization Principles and Plans, the FOMC intends to operate with the smallest balance sheet consistent with efficient and effective implementation of monetary policy.

4. Last week the G20 Leaders highlighted the importance of improving efforts on anti-money laundering and countering the financing of terrorism. As you know, this has been a focus of mine for some time. Rep. Velazquez and I sent a letter to Treasury Secretary last week on this issue, As we look at the effectiveness of our AML regime over time, it seems a 'compliance for the sake of compliance" approach has moved us away from the original intent of these rules. There have been a number of suggestions to both more effectively target bad actors and simplify the compliance regime.

- **Do you agree our AML regulatory regime deserves a fresh look?**

Elements of the Bank Secrecy Act/anti-money laundering (BSA/AML) regulatory requirements are several decades old. The Federal Reserve is constantly looking for ways to improve and maintain the effectiveness of the BSA and U.S. anti-money laundering (AML) regime as appropriate. In this regard, the Federal Reserve is an active member of the Bank Secrecy Act Advisory Group (BSAAG), a body established by Congress consisting of representatives from federal regulatory and law enforcement agencies, financial institutions, and trade groups, and participates in BSAAG's efforts to enhance the BSA.

I understand that Congress has recently enacted the "Countering America's Adversaries through Sanctions Act," which requires the President, acting through the Secretary of the Treasury to assess the effectiveness of, and ways in which, the United States is currently addressing the highest levels of risk of various forms of illicit finance. The Federal Reserve is committed to working with the Secretary of the Treasury in this regard.

- **Have you personally spoken with the Treasury Secretary about the need for reform of the AML regulatory requirements?**

The Federal Reserve is committed to continuing the close working relationships already in place with the Treasury Department, Financial Crimes Enforcement Network (FinCEN), law enforcement, and the other supervisory agencies to develop ways to improve the efficiency and effectiveness of the BSA/AML requirements. We look forward to working on these matters with the Treasury Secretary as well as the Treasury Undersecretary of Terrorism and Financial Intelligence.

- **Is it time for FinCEN to reclaim its exam authority for AML compliance, at least for the most complex, internationally active institutions?**

The Federal Reserve takes seriously its responsibility to provide ongoing, enhanced supervision of the largest, most complex banking organizations. Our examinations and evaluations of a banking organization's risk management and compliance practices related to anti-money laundering laws are an important part of our overall approach to ensuring the safety and soundness of the institutions we supervise. A more exclusive BSA examination role for FinCEN would be a fundamental re-alignment in how the federal government supervises for BSA compliance at large, complex banks and could potentially result in duplication of effort, lead to gaps between the supervision of small and large banks, and reduce flexibility for the federal banking agencies when addressing compliance issues that are relevant to safety and soundness.

5. In their Declaration, the G20 leaders raised the importance of "effective implementation of the international standards on transparency and beneficial ownership of legal persons and legal arrangements, including the availability of information in the domestic and cross-border context." I recently cosponsored legislation with Reps. Maloney and King, which would effectively ensure the beneficial owner of a corporation is known and readily verifiable. Given your role in AML supervision, from a "Know Your Customer" standpoint, do you think this would be a worthwhile step?

While the Federal Reserve does not have an official position on H.R. 3089, "Corporate Transparency Act of 2017," in general, it has supported past efforts to promote transparent incorporation practices and enhance information available to law enforcement. In addition, this step may complement the legal entity customer information that banks and other financial institutions are required to collect under FinCEN's Customer Due Diligence and Beneficial Ownership Final Rules.

6. Clearly one problem we face in this country that is difficult for us to address at the federal level alone is local zoning laws and ordinances which may unintentionally be a barrier to increasing our housing supply and notably a supply of affordable housing for mainstream Americans. Would you agree that having this Administration create a new council consisting of federal reserve officials, federal home loan banks, US mayors and other local officials, affordable housing advocates, academics and the private sector would be an important step towards a necessary dialogue on creating a housing market for all Americans?

Efficient regulation in all areas is an extremely important issue for the Congress and the Administration to address, and housing-related regulation is no exception. However, zoning laws and ordinances lie outside the purview of the Federal Reserve Board (Board).

7. As you know housing finance reform remains the biggest piece of unfinished business left from the financial crisis. In the past the Fed has played a constructive role in housing finance reform. I was pleased to see last week Governor Powell highlighted the role housing played in the crisis and the flaws within the existing system, which is still dominated by the duopoly of Fannie and Freddie. This duopoly is shouldering much of the risk in the market despite interest from the private sector. As you know the recent Treasury report highlighted the need to reassess the way mortgages are treated - from assignee liability being placed on investors who do not have control over the origination process to the risk-weighting and stress-testing of mortgage products vis-a-vis other asset classes. As we begin to contemplate GSE reform, is the Fed willing to take another look at these rules and the extent to which we are propping up this duopoly through potentially overly punitive measures on private markets?

Capital rules require banks to hold a percentage of their assets as capital to act as a financial cushion to absorb unexpected losses. Riskier assets require higher capital cushions and less risky assets require smaller capital cushions. For example, banks are required to have less capital when they hold mortgage-backed securities that have explicit government backing (e.g., Ginnie Mae securities), than when they hold securities that protect a government-sponsored enterprise (GSE) against credit losses that could occur during stressful macroeconomic conditions (e.g., subordinated securities that are included in so-called credit risk transfer transactions). Collateral matters as well, so mortgages held in bank portfolios are typically weighted favorably compared to other asset classes; therefore, no further reductions in risk-weights for such loans is likely necessary.

Analogously, stress test rules are designed to ensure that banks have effective capital planning processes and sufficient capital to absorb losses during stressful conditions, while meeting obligations to creditors and counterparties and continuing to serve as credit intermediaries. At the same time, liquidity stress tests are designed so that banks can meet their near-term payment obligations in the presence of contractual outflows and counterparty runs. In prescribing more stringent prudential standards, including stress test and liquidity requirements, the Board may differentiate among bank holding companies on an individual basis or by category, taking into consideration their capital structure, riskiness, complexity, financial activities (including the financial activities of their subsidiaries), size, and any other risk-related factors that the Board deems appropriate.

Because capital and stress test rules are risk-dependent, it is likely such rules will change as a result of GSE reform. On the one hand, if Congress decides to provide an explicit, transparent, guarantee to certain mortgage-backed securities, then less capital will need to be held when banks hold such securities than otherwise. On the other hand, if there is no government-backing for certain mortgage-backed securities, then banks will need to assess potential unexpected losses associated with the underlying mortgages for such securities and then hold sufficient capital to absorb losses in stressful conditions. This would also be the case when a bank holds mortgages, rather than mortgage-backed securities, on its balance sheet.

As Governor Powell noted in his July 6, 2017 remarks, a government guarantee should apply to securities, not to institutions. GSE reform should not leave us with any institutions that are so important as to be candidates for too-big-to-fail.

8. During prior statements you previously discussed in some detail fixed income liquidity. And while the Fed continues to say that the corporate debt and Treasury markets are robust in the wake of profound regulatory changes, we observe that not all markets are assessed equally. Asset-backed securities do not enjoy the same robust liquidity – principally due to regulatory pressures such as the Volcker Rule and others. You have previously eluded that the Volcker Rule could be well-suited to revisions. Just weeks ago, Governor Powell indicated these efforts are underway. Would you please tell our office what the Fed is doing to make sure the remedy fits the symptom? And, are you talking with stakeholder groups such as broker/dealers and large investors? Lastly, when might these efforts produce a revised product?

To help monitor fixed-income market liquidity, staff of the Board, Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Securities and Exchange Commission, and Commodity Futures Trading Commission (agencies) prepare quarterly reports regarding liquidity in the corporate bond market, which are available on the Board's public website.[4] A number of other researchers have also performed analyses of fixed-income market liquidity. Although some studies have found evidence of somewhat reduced liquidity in a few pockets of the financial markets, most studies have concluded that market liquidity broadly is in good condition across the U.S. financial markets. Many factors simultaneously affect fixed-income market liquidity, including current financial market conditions, making it extremely difficult to separately identify the impact of the Volcker Rule with any degree of precision. The Board will continue to monitor and report on developments.

Regardless, there may be benefits to simplifying aspects of the Volcker Rule. The agencies are currently exploring possibilities to simplify and tailor regulations implementing the Volcker Rule, while fully implementing the statutory provisions. While it is difficult to predict the timing of any potential revisions with certainty, the Board is open to meeting with all relevant stakeholders and considering all input received throughout the revision process.

[4] https://www.federalreserve.gov/foia/corporate-bond-liquidity-reports.htm.

<u>Questions for The Honorable Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System from Representative Tipton</u>:

1. Last month the Treasury released their first report on the state of financial regulation and included in that report was a recommendation for regulators to expand coordination of their examination and data collection efforts. I recently sent a bipartisan letter to Secretary Mnuchin, with 31 other Financial Services Committee colleagues, on this very topic. In a press conference, you made remarks agreeing that there are burdens that can be simplified and reduced in the financial system. Do you support greater exam coordination and data collection efforts among regulators?

The Federal Reserve Board (Board) supports continuing and enhancing efforts to coordinate the agencies' examination and data collection activities. As the Treasury Department's report notes, the Board and other agencies already coordinate many of these activities through their participation on the Federal Financial Institutions Examination Council (FFIEC). Notable recent coordination efforts by the FFIEC have aimed to streamline the data collected from financial institutions on the quarterly Call Report, improve the consistency and coordination of agency efforts to assess the cybersecurity readiness of supervised banks, and identify and initiate changes to rules and regulations in order to eliminate unnecessary burdens on community banks, such as simplifying certain requirements of the agencies regulatory capital rules. Moreover, the FFIEC member agencies are currently engaged in an examination modernization project. This project is reviewing community bank examination processes used by the FFIEC members and is expected to result in recommendations for procedural changes that would make examinations more efficient and less burdensome to banks.

In addition to these efforts, the Board has consistently coordinated with and relied on the work of other bank regulators, to the greatest extent possible, in supervising bank and savings and loan holding companies. At community and regional bank holding companies where the Board is not the primary insured depository institution regulator (IDIR) and the majority of the consolidated assets are at the bank level, the Board's policy is to rely substantially on the work conducted by the primary IDIRs. These efforts include using existing examination reports and other supervisory information submitted to other regulatory agencies to reduce the scope and frequency of holding company inspections and closely coordinating with other agencies to avoid duplication of supervisory activities, reporting requirements, and information requests. Periodic reviews are conducted by the Board staff to ensure that Reserve Banks are coordinating with and appropriately relying on the work of primary regulatory agencies.

2. A recent survey conducted by Morning Consult found that 89% of the general public believes that it is important to the U.S. economy to have banks of all sizes. Tailoring of regulations, as it's commonly used, means adjusting regulations and supervision to fit and accommodate the variety of sizes, risk profiles, and business models in the banking industry. Without tailoring, financial institutions are driven to consolidate and adopt the same business model, homogenizing the industry. What is the Federal Reserve doing to promote variety in the banking industry?

The Board recognizes the importance of having a diversified and competitive banking industry that is comprised of banking organizations of many sizes and specializations. To promote this, the Board has, and continues to, tailor its regulations and supervisory program based on the risk profile, size and complexity of the organizations we supervise. Doing so allows the Board to achieve its goal of promoting a strong banking system and preventing or mitigating against the risk of bank failures, while minimizing a bank's regulatory compliance costs and accommodating the variety of sizes, risk profiles, and business models in the banking industry.

This tailored approach is reflected in our rulemaking, supervisory guidance, reporting requirements, and in the execution of supervision. Banking organizations with $50 billion or more in assets are subject to enhanced prudential requirements—including capital and capital planning, stress testing, and liquidity requirements—that increase in stringency, based on the size, complexity, and risk profile of the firm. The largest, most systemically important firms are subject to the Large Institution Supervision Coordinating Committee framework, which is a supervisory program designed to materially increase the financial and operational resiliency of systemically important financial institutions to reduce the probability of, and cost associated with, their material financial distress or failure.

In contrast, the Board has taken many steps to reduce regulatory burdens for the small and regional banking organizations. These include issuing guidance to encourage examiners to review loans off-site for banks with less than $50 billion in total assets, thereby reducing the number of examiners physically on-site; reducing the regulatory filing requirements for banks with less than $1 billion in consolidated assets by eliminating about 40 percent of the items in the required quarterly financial reporting form known as the Call Report; and improving examination planning efforts so that well-managed, lower risk banks receive less supervisory scrutiny.

To help further ease regulatory burdens for small banks, we routinely review our guidance and examination processes to insure they are appropriate. To that extent, we are looking at ways to develop a simplified regulatory capital regime for small banks, further simplify regulatory filing requirements for small banks, and have initiated efforts to ease the conditions under which an appraisal is required to support a commercial loan. We have also recommended that Congress consider exempting community banks from two sets of Dodd-Frank Wall Street Reform and Consumer Protection Act requirements--the Volcker Rule and the incentive compensation limits in section 956.

3. Under current interest rate policies, banks will receive from the Federal Reserve interest payments for the funds that banks have on deposit at the Fed. Former Fed Governor Don Kohn, discussing the importance of paying interest on these reserves, wrote that "the Fed will need to make good economic arguments to explain why paying interest to banks is necessary." What are the Federal Reserve's "good economic arguments" for this practice?

The payment of interest on excess reserves contributes to effective implementation of monetary policy by helping to manage the level of the federal funds rate and other short-term interest rates. Most major central banks have the authority to pay interest on excess reserves and have used this authority to help manage the level of short-term interest rates.

In the current circumstances, interest on excess reserves is essential to the Board's ability to manage the level of short-term interest rates even with a very elevated level of reserve balances in the system. Absent this tool, the Board would not have been able to raise the level of short-term interest rates until it had dramatically reduced its holdings of longer-term securities. As demonstrated in the so-called "taper tantrum" in the summer of 2013, markets can be very sensitive to information bearing on the Board's holdings of longer-term securities. It seems likely then that a program of rapid large scale sales of assets to reduce the level of reserve balances in the system would have been very disruptive to markets and counterproductive in fostering continued economic recovery and a return of inflation to 2 percent.

4. The Volcker Rule was written under the justification that banks should not be using insured deposits to fund inappropriate securities activities. To what degree is authority under Section 23A of the Federal Reserve Act not enough to keep banks from using insured deposits to engage in the securities activities that are the target of the Volcker Rule?

Section 13 of the Bank Holding Company Act, also known as the Volcker Rule, prohibits banking entities from engaging in proprietary trading of financial instruments or from acquiring or retaining an ownership interest in, sponsoring, or having certain relationships with private equity funds or hedge funds (covered funds), subject to certain exceptions. Section 23A of the Federal Reserve Act limits the ability of a depository institution to engage in certain transactions with an affiliate, such as loans or extensions of credit to the affiliate.[1]

The Volcker Rule's activity restrictions generally apply to banking entities, which the statute defines to include insured depository institutions and their subsidiaries and affiliates, with limited exceptions.[2] Section 23A does not limit the proprietary trading and covered fund activities of a bank itself. Rather, it limits the ability of a bank to fund activities of an affiliate through loans to or transactions with the affiliate. As such, section 23A may limit the direct exposure of a bank to risks associated with an affiliate's activities, as well as the direct transfer of any funding subsidy effects relating to deposit insurance and access to the Board's discount window. Other measures such as capital, liquidity, and risk management requirements applicable to the bank, affiliate, or consolidated firm may also serve as potential limitations. Any decision to remove the Volcker Rule's restrictions and rely on other measures such as these would be a matter for Congress.

5. Former Fed Chairman Paul Volcker, when recently asked about proposed revisions to the Volcker Rule, responded by saying, "Everybody wants to see it more simple . . . [and] if they can do it in a more efficient way, God bless them." Do you share the views of Chairman Volcker, that there is value in making implementation of the Volcker Rule simpler and more efficient? If so, what changes would you consider?

The statutory requirements of the Volcker Rule are very complex – the statute includes many detailed restrictions that have broad effect throughout a firm. Even without a statutory change,

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[1] By its terms, section 23A of the Federal Reserve Act applies to all Federal Reserve member banks. 12 U.S.C. 371c. Other statutes expanded the coverage of section 23A to apply to all insured depository institutions. *See, e.g.*, 12 U.S.C. 1828(j) and 12 U.S.C. 1468(a).

[2] Section 13 defines "banking entity" to include any insured depository institution, any company that controls an insured depository institution or that is treated as a bank holding company for purposes of section 8 of the International Banking Act of 1978, and any affiliate or subsidiary of any such entity, with limited exceptions. 12 U.S.C. 1851(h)(1).

there may be ways to streamline, simplify, and tailor the interagency Volcker Rule regulation to reduce costs while continuing to ensure the statutory requirements are fully implemented. The Board is assessing opportunities for changes in coordination with the other agencies also responsible for the Volcker Rule's implementation under the statute.

6. The leverage capital ratio requires banks to hold capital against any and all assets, regardless of the risk of the assets. Recognizing the value of the leverage ratio as a backstop where risks can change, are hard to calculate, or where the risks are unknown, what is the purpose of holding leverage capital for riskless assets, such as Treasury securities and funds on deposit, at the Federal Reserve? Would there be economic or supervisory value in excluding these riskless assets from leverage ratio calculations?

The leverage ratio provides a backstop to risk-based capital requirements pursuant to which a firm must hold capital in accordance with the riskiness of its exposures. Risk-based measures generally rely on either a standardized set of risk weights that are applied to exposure categories or on models. In either case, there are opportunities for potential arbitrage. Standardized risk weights reflect the risk of a class of exposures rather than each particular exposure, and models are reliant on historical data and thus may understate risk. In contrast, a leverage ratio, by its nature, lacks this potential for arbitrage because it does not differentiate the level of capital required by exposure type. Excluding select categories of assets from the leverage ratio would be inconsistent with the leverage ratio's purpose as a risk-insensitive measure that simply measures how much a firm's assets are supported by leverage and with its goal of addressing the risk that a banking organization will fund itself with too much debt. In the Federal Reserve Board's experience, a banking organization can be vulnerable if its total leverage is high during stress periods because high leverage decreases the amount of equity a banking organization has available to absorb losses.

7. It is important with regard to governance and other matters that a bank's board of directors remains active and informed as well as set tone and policies for the bank. However, the accumulation of recent rules and regulations seems to be dragging boards into actual bank management and distracting them from the business plan and overall strategic policy-setting function of boards. Governor Powell has already talked about looking at restoring balance to the role of boards of directors. What is the Fed looking at in that regard, and what are the principles guiding your review?

The Board strongly agrees that boards of directors need to play an active, informed oversight role that is distinct from the role of senior management.

In that regard, on August 3, the Board announced that it is seeking public comment on a corporate governance proposal designed to enhance the effectiveness of boards of directors.

The Board's proposed guidance was informed by a multi-year review of the factors that make boards effective, the challenges that boards face, and how boards influence the safety and soundness of their firms and promote compliance with laws and regulations. The proposed guidance is intended to address three primary findings from the review:

- Many existing supervisory expectations do not clearly distinguish the roles and responsibilities of boards of directors from the roles and responsibilities of senior management.
- Boards often devote significant time satisfying supervisory expectations that do not directly relate to the board's core oversight responsibilities.
- Boards face significant information challenges that require active management of information flow.

The Board's proposed guidance consists of three parts:

- The Board Effectiveness Guidance (BE Guidance) that identifies the key attributes of effective boards of directors for the largest domestic bank and savings and loan holding companies and non-bank systemically important financial institutions. This proposed guidance is intended to better distinguish supervisory expectations for boards from that of senior management, and shift the supervisory focus to the board's core responsibilities. In particular, the proposal would emphasize a board's responsibilities to set clear, aligned and consistent direction, and to hold senior management accountable for, among other things, adhering to the firm's strategy and risk tolerance, and remediating material or persistent deficiencies in risk management and control practices.
- A proposal to eliminate or revise unnecessary, outdated, or redundant supervisory expectations for boards of directors included in certain existing Board Supervision and Regulation letters. This should allow board of directors to focus more of their time and resources on fulfilling their core responsibilities.
- A proposal to clarify expectations regarding the communication of supervisory findings by the Board to boards and senior management (revised SR 13-13/CA 13-10).

The Board's corporate governance proposal is currently out for public comment for a 60-day period ending October 10.

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